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LOW COST HOUSING IN SOUTH AND SOUTH-EAST ASIA*

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CHAPTER IV

PAKISTAN

1. A New Nation

The new Government of Pakistan was established 15 August 1947. Immediately it was faced with the gigantic problem of the refugees and the resulting disruptions to communications and commerce. There was fighting on the borders and in the cities. In Lahore a very large section of the centre of the city was put to flames and completely destroyed.

Chapter III contained a description of some of the refugee problems in India. It would be impossible to state on which side of the India-Pakistan border the difficulties were greater, but in the case of Pakistan it should be remembered that the proportion of refugees to the new country's population was considerably higher than in India. In West Pakistan, with a population of about 80,000,000, there were 2,200,000 refugees, a large proportion of whom are in the two chief cities of Karachi (the capital) and Lahore. In East Pakistan the population is small by comparison, and the larger movement of refugees was in the other direction. Nevertheless, the city of Decca in East Pakistan increased from 450,000 in 1947 to its present population of 550,000.

In spite of these problems, the new Government of Pakistan has put considerable energy into "schemes of nation-building significance", and has set up a Development Board to co-ordinate them and assess their priorities.+

Some of these schemes are very ambitious and will be far-reaching in their social and economic effect. Those which are of special interest for housing and community development will be described later in this chapter.

This chapter will, in general, follow the sequence of the preceding one, but because much that was stated in that chapter is relevant also to Pakistan, an attempt will be made to distinguish the special characteristics of Pakistan's problems rather than to cover the same ground. It is hoped

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+ See "Pakistan Development Schemes", listed in Appendix K

that the two chapters will be considered together. There are very interesting comparisons, for instance, in the refugee problems of the two countries and in the way they have been tackled. Again, the need for research and for training is just as strong in the two countries, but there is no need to repeat the arguments given in Chapter III.

2. Organization for Housing and Planning

The Mission's journey through Pakistan began in Lahore in the Punjab, but the account will begin in Karachi because this city is the seat of the new Government.

Responsibility for the economic and social development of the country rests with the Ministry of Economic Affairs, while responsibility for housing and town and country planning rests with the Minister of Health and Works. The mission held meetings with the "Joint Secretaries" of these two Ministries and was told that the assistance they most vitally needed was in obtaining steel and key building products for their major projects. They hoped that through the Colombo Plan they would receive assistance for training and for engaging technical consultants, both of which were items in the Plan to which they subscribed. The Mission received the impression that the country's need of expert technicians in many fields was very fully appreciated, and that the right kind of technician from anywhere would be welcome so long as he remained in the country for at least three years. Except in the case of the occasional consultant required to give specific advice, it was considered that a shorter time was not enough for a foreigner to get a full grasp of the situation in Pakistan. From its own experience, the Mission was in agreement with this point of view. Technicians thought to be specially needed were irrigation and other specialist engineers, architects and town planners.

The Ministry of Health and Works, though responsible for housing and planning , does not in fact give much positive guidance or direction in these fields to the Provinces. Responsibility for housing policy and standards, in fact, rests very much with the Provinces, as it does with the States in India.

In the municipalities, housing responsibility is usually divided among several authorities. In Karachi, for instance, there is the municipality itself, the Port Trust, the Cantonment Board (for military housing) and the newly formed Karachi Improvement Trust.

In the case of refugee settlements the central Public Works Department constructs houses on behalf of the Relief and Rehabilitation Fund Commission.

The central Public Works Department is also responsible for town planning, but so far it has been concerned mainly with ad hoc development schemes. This Department also has a local function in Karachi. Attempts are being made at present to recruit a Government town planner who would advise the Government generally on planning, and would also prepare the development plan for Karachi itself, based on an advisory plan which has already been prepared.

The Mission is of the opinion that there is a clear need here, as in India, for making a more satisfactory link between housing and planning and for focusing responsibility for both in some responsible agency of Government. It is believed that the same concentration of policy and effort would also be an advantage on the Provincial and Municipal scale.

One great organizational difficulty in Pakistan is, of course, the fact that West and East are separated by many hundreds of miles. In West Pakistan, during a discussion of regional research organization, it was suggested to the Mission that the country's problem, as regards climate and materials, were orientated more towards the regions of the Middle East. This, of course, cannot be said of East Pakistan, which is quite detached from that orbit and has an entirely different climate and vegetation.

3. Gaps in Legislation

The Mission believes it is necessary to enact much stronger legislation for housing and slum clearance, and for town and country planning, and what was stated in Chapter II regarding the necessity to control speculative land values applies just as strongly here. There is a definite need for improved planning powers in Lahore and in Dacca, and for the preparation of a comprehensive development plan in the three cities visited by the Mission. In Karachi the Government is taking the initiative with its advisory plan,

but more government backing for town and country planning seems to be needed in the Provinces.

The Mission is of the opinion that the Government would do well to review, simultaneously, on a national basis, the substance of its planning, housing and land legislation, in consultation with the Provinces. In Lahore and Dacca there seems to be a desire for advice in this field of legislation.

4. Housing Policy and Standards

There is no subsidized housing, apart from the issuance of interest-free loans to the Provinces. Except in the case of refugee settlements, the bulk of the houses now being built by the Provinces is for middle income families. In Lahore a very high proportion of Government building was for middle and upper middle income groups, and very little for the low income groups. In each Province the Public Works Department or the Department concerned, builds houses for government employees, and it is only in this category that low cost houses are being built in any quantity. Until recently, one-room houses with communal latrines have been built for the lowest paid government employees, but the Provincial governments appear to be anxious to set a minimum standard of two rooms and a separate latrine. In refugee settlements the idea of two single-room units convertible to a two-room unit is being tried, as in Delhi, India.

One almost universal feature of houses in Pakistan is the high walled courtyard at the back of every house, demanded by the Muslim purdah. This can be made a very pleasant feature if it is large enough in which to grow a tree or a vine.

5. Refugee Settlements

In the chapter on India[+], refugee settlements were divided into three categories: peripheral, satellite and independent. In Pakistan most of the settlements are in the first and last categories.

+ See Chapter III, para. 6

The refugee situation in Pakistan is rather different[+]. In India the refugees flocked to cities which were already seriously overcrowded. In Pakistan they came to small cities which could afford to expand. This did not lessen the immediate housing problem -- in fact the proportionate population increase in Karachi and Lahore was greater than in the Indian cities - but there was not the same reason for starting settlements in satellite towns. In the desert country around Karachi, satellite sites are, in fact, very hard to find because of the water problem.

Another point, which was mentioned earlier, is that a much higher proportion of Pakistan's refugees were rural workers, and this made it possible to plan for the "colonization" of many of them in the new towns and villages which will be set up as part of the great new regional schemes of land reclamation and electrification. Before examining these plans one of the city resettlement schemes will be described first.

In Karachi one of the most serious effects of the arrival of refugees was the sudden reduction in the water supply of this desert city. It now stands at only 14 gallons per head per day, but it is hoped to increase this to 30 gallons if the dollar problem, the slow delivery of pipes and the shortage of technicians and equipment can be overcome.

Two main types of settlement were noted: those in which the Government provides only plots and the essential community facilities, leaving house building to the refugees; and those in which the Government provides complete houses and facilities in the ordinary way.

The Jalukaet settlement is an example of the first type. Here 500 acres are devoted to a self-building scheme. Plots of 80 square yards have been laid out and standpipes and communal bore-hole latrines provided at a cost of 600,000 Pakistan rupees[++] (approximately £ 66,000 or $ 186,000) for the whole 500 acres. Palm matting is provided by the Government at nominal prices, and refugees can build temporary houses in

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+ See para 1 of this Chapter.

++ It should be remembered that the Pakistan rupee and the Indian rupee do not have the same value: 100 Pakistan rupees = $ 31.00 or £ 11 approx.
100 Indian rupees = $ 21.00 or £ 8 "

accordance with the siting regulations. The plot becomes their own if they build permanent houses according to standards laid down or the type plans provided. There is, of course, a danger of very sporadic development so far as permanent houses are concerned, but the area as a whole in being developed on a community planning basis. Land is provided free for the houses but sold at a good price for shops. The demand for shops seemed to be tremendous, even for an Asian country, but no particular limit in the relation of shops to families seems to have been set.

The largest example of the second type of settlement is Nazimbad, a new suburban community which provides, on a mass scale, government-built terraced houses of single rooms, later convertible to two. The scheme includes some interesting tropical designs for schools and clinics. The houses themselves are also well designed, but it seemed that a much too high density of development was being forced upon the planners and that in consequence sections of the plan looked rather like a European industrial "by-law" development of the 19th century, with closely packed terraces unrelieved by open spaces or adequate sites for community buildings. In desert country there is of course a good reason for compact groups of houses and comparatively narrow roads, but the groups should be kept small and the communal open spaces concentrated into reasonably large and useful areas.

This scheme, by comparison, cost 9 million rupees (approximately £ 1,000,000 or $ 2,800,000) for the land cost and services development of 1,000 acres, including in this case roads, sewers, independent water supply and separate W.C. connexion to houses. The pukka development of land at Nazimbad was therefore 7 1/2 times as costly as the makeshift one at Lalukaet.

In spite of these slight criticisms, the Mission was of the opinion that both these great schemes were full of interesting ideas and most creditably organized.

Since 1947, 12,000 houses constructed almost entirely of solid concrete bricks, with reinforced concrete slab roofs have been built. No attempt has so far been made to use materials providing better insulation.

In East Pakistan, where the climate and the materials available are quite different, there have been some interesting experiments in building temporary bamboo barracks and houses -- a few two-storey, though these were abandoned later. Both shingles and matting were used. It was found that although these houses were adequate if maintained by owner-occupiers, they were not satisfactory for rented government housing. In Dacca, permanent housing is now being provided as part of the general urban housing programme.

6. The Thal Regional Planning Project

One of the most important of the big development projects, from the point of view of housing and "colonizing" the refugees, is the Thal project, 150 miles West of Lahore, Punjab (West Pakistan), which unfortunately the Mission was not able to visit. This project will comprise 12 new towns and 1,000 new villages, spread over two million acres. A relatively high proportion of refugees who came to Pakistan are workers on the land, which makes large scale settlement schemes of this kind a hopeful proposition.

A Thal Development Authority has been set up, somewhat on the lines of the Tennessee Valley Authority in the United States and it is proposed to develop the area fully in the course of the next five years - a very bold proposal. The project was in fact initiated in 1939 but had to be suspended during the war. Its primary aim is to produce a substantial increase in the yield of food grains, sugar cane and cotton.

The five-year building plan envisages 4,000 new rural houses on one quarter acre plots, with an average of 15 acres of land per family. The total estimated cost is 900 Pakistan rupees per house (approximately £100 or $ 280), and 600 rupees per house for artisans. The Mission was informed that some of the rural houses are being built by aided self-help methods. In the towns houses are of two types, costing 3,000 and 5,000 rupees.

One important feature of the housing programme is that industrialists are given good development facilities for setting up new industries, but in return they must provide houses at prescribed standards for all their workers. As the Development Authority is planning on a community basis and providing schools, clinics, etc., a standard of community development at least equal to that achieved voluntarily in the steel workers' town of Jamshedpur in India[+] should be possible in the towns of the Thal project. Responsibility for the planning development of the new communities and for the design of buildings is in the hands of the Consultant Architect for the Punjab (a permanent official post). Communications are the responsibility of the Chief Engineer for Building and Roads.

Another project on a similar scale which is now well under way is the Indus Valley Project, which is intended to supply power and irrigation and to assist in agricultural rehabilitation. Two million acres are involved, of which 600,000 have to be reclaimed and settled. In this case, however, most of the area is already settled, so there will be no housing problem until the reclamation is well advanced. One unfortunate feature of this project is that the Indus Valley, as a geographic regional unit, is partly in Kashmir, where an unrelated irrigation project is understood to be under way for the upper reaches of the Indus.

7. Rural Housing

The Indian village described in Chapter III[++] is not unlike one of the villages that might be found in West Pakistan, but it would be totally unlike the villages of East Pakistan.

The two parts of the country are entirely different in climate and vegetation. For the most part, West Pakistan has a low rainfall, excessive heat in the summer, and in the Punjab particularly, quite cold winter nights

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+ See Chapter III, para. 8

++ See Chapter III, para. 7

which make the usefulness of "tropical" housing problematical. The country around Karachi is a desert region; the nearest oasis is some 14 miles away. There is rain for barely seven days of the year.

In West Pakistan the main hope for rural housing seems to be in the large-scale colonization schemes mentioned previously+; these make possible the development of the country's economy and the raising of the standard of housing and comminity life at the same time, by forming clusters of new villages within range of new town centres. The Government's policy with regard to these developments is to encourage peasant ownership.

In East Pakistan, it rains for about 70 days of the year; the climate is humidly tropical, though mild in the winter months. A large part of the land is low-lying and deveted mainly to the cultivation of jute and rice. The rural houses are often in isolated small groups. Even in the villages many are built on stilts, with wood piles and timber or bamboo frames, bamboo matting, bamboo tiles, palm or reed thatching.

Rural housing is tied up to a large extent with the jute industry. One of the problems is that the main sorting and packing stations - such as these in Narayangunj - require housing for seasonal labour, and this has to be provided by the jute companies. No standards are laid down, however, and frequently "labour lines" or barrack ranges are provided, divided into compartments to accommodate 20 closely packed men, who use these quarters for sleeping purposes for a month or so during the seasonal packing periods. Normally the men come to the job without their families, but if a man brings his family one of the compartments for 20 men has to be handed over to him.

As in India, the best hope for rural housing lies in an extension of the aided self-help principle.

+ See para. 5 of this Chapter.

8. Three New Capitals

The Mission visited the three main cities of Pakistan: Karachi and Lahore in West Pakistan, and Dacca in East Pakistan. There is one thing common to all these cities that is quite different from the Indian cities described earlier: all of them are destined to grow not only by nature but by the will of man. For all have become new capitals. Karachi is the capital of the nation, Lahore of the Punjab, Dacca of West Bengal.

The very sudden growth during the last three years, however, was certainly not planned and has caused tremendous difficulties.

Karachi. The Government is very conscious of the advantage of a regional plan for the new capital. An extremely interesting advisory plan, based on an admittedly sketchy survey and limited statistics, has been prepared by a Swedish town planner. The population target for the city is 3,000,000 (nearly three times its present size) based on an anticipated large increase in industrial developments and a comparison of the relative size of capitals to total populations in other countries. It is doubtful if such a comparison is valid under present conditions and in the light of modern techniques of geographic regional planning; but on the other hand, there should be no social or economic objection to a city of 3,000,000 as such, provided its growth is carefully guided according to a comprehensive plan based on the modern principle of separated communities, with good park and recreational facilities and an efficient road and transport system.

The advisory plan seems to take care of this. It plans its expansion on the basis of linear community units as opposed to the more usual satellite units, with wedges of agricultural land thrusting towards the centre of the city between the linear developments, which follow the main lines of communication. This may well be a justifiable technique for a city with a comparatively small existing built-up area. It may be described as controlled ribbon development - rationalizing a natural tendency and making it safe, convenient and habitable.

The site for the capital, however, was previously chosen on the basis of a satellite community, six miles from the city, and this is to be

linked to the main business centre by a broad avenue conceived as the "main axis of activity".

Another interesting point about the plan is that workers have been computed at one-third of the city's population compared with one-half in Europe. Of the working population, 50 per cent are to be in the central area where there will be a number of multi-storey apartment buildings; and 50 per cent are to be located in the new linear communities, which are planned mainly as fairly closely knit developments of courtyard-type houses adapted to Muslim custom. Neighbourhood units are to provide accommodation for about 40,000, as against the normal 5,000 to 10,000 in more highly developed countries, mainly to help speed up the provision of community buildings as part of the policy of rapid improvement in the standard of living. It would be interesting to hear the views of social scientists on this point.

Densities proposed in the outer areas are 75 families per net acre (40 gross). Open spaces within communities are limited because of the water shortage which is likely to continue for some time, but the spacious plots of open land should one day provide easily accessible parks and recreational facilities when water is finally plentiful.

The new Government town planner will presumably prepare a detailed development plan for the initial stage of construction. If the other cities of Pakistan that are still of manageable size proceed on this basis of planned development, under the protection of adequate planning legislation, disastrous uncontrolled growth will be avoided and the country should prosper accordingly. However, a high degree of technical skill and very firm legislative and administrative machinery are essential to the success of such a programme.

In the meantime Karachi is tackling its immediate problems. As was mentioned earlier, the city has quadrupled from 300,000 in 1940 to 1,200,000 today. Some 30,000 families (probably around 200,000 people) now need houses. An attempt is being made to rehouse them in two years, on a non-subsidy basis. The cost per unit is estimated at 16,000 rupees

(approx. £1,770 or $4,900) and they will be rented at 14 rupees a month, on a basis of a loan repayable in 16 years. Included in the programme is provision for a substantial number of houses for government employees, from clerks to Ministers.

There are two qualified architects (one Pakistani, one British) working under the Chief Engineer on housing and planning problems.

Lahore. This is a green city compared with Karachi. It has spacious avenues and open spaces in its business and government centre. It also has its share of slums and overcrowding, which have worsened since Partition. A redevelopment plan has been prepared for the fire devastated central area which is to be rebuilt as a shopping thoroughfare and a new flatted housing area. Much of the property destroyed consisted of four-and five-storey tenement slums, which are characteristic of this city.

In the opinion of the Mission there seemed to be a disproportionate emphasis on middle income and even high income new housing, all of which has been developed on an economic repayment basis. Because there is no cost limit, no space standard set for any type of house, and no prescribed limit in the use of materials, there seems to have been an almost abandoned use of space in some of the larger government-built houses. Floor areas and ceiling heights are generous, but it was felt that, in many cases, better planned space and more attention to finish would have resulted in more convenient, more attractive and cheaper houses, and a greater economy in building materials. This has apparently resulted from lack of staff, for technicians are scarce in Lahore.

In the housing layouts there were one or two good examples of road conservation by the use of footpath approaches to rows of houses placed at right angles to the road, with good communal gardens between the rows.

Reference has already been made to the Government Architect's office which is planning the Thal and other new community developments, as well as public buildings. Altogether, there are five architects and two planners in the Punjab. A foreign consultant is being sought for the planning of a new university town. No architects are employed on any of the urban housing schemes.

Dacca, East Pakistan. The Provincial capital, Dacca, is also planning a new extension. This will be adjacent to the old town, and concentration on this new and exciting problem seems to have tempted neglect of the old town, which is an overgrown village with extremely narrow streets and very bad traffic congestion. The absence of legal or administrative facilities prevents the tackling of the problem of the old town or the application of a decentralization policy. Nevertheless, there is no question that these should be provided quickly before the congestion and overcrowding becomes even more unmanageable than it is now. A metropolitan regional plan for decentralization and satellite development is clearly necessary, and it was the opinion of the Mission that Government officials recognized this and would be ready to accept expert help from any quarter.

There is a nucleus staff with an architect and a planner under the Chief Engineer, but it should be developed into a complete planning team.

In connexion with its geographic regional problems, East Pakistan urgently needs advice on irrigation engineering.

Some well-designed apartments and houses have been built by the Engineer's Office. There has been judicious conservation of land for the most beneficial use of space, and good internal planning of the dwelling units.

Dacca has an ambitious industrial policy and some Industrial Estates of considerable size are being developed.

9. Progress in Research and Experiment

Both the Central and Provincial Governments are well aware of the necessity for more research; and Pakistan, like India, would do well to have an organized regional research programme -- probably a main centre in the West, and a subsidiary one in the East, to study the special problems of climate and available local materials, notably bamboo. The idea of a United Nations service for sorting and disseminating information was agreed to be highly valuable.

In Lahore, under the jurisdiction of the Chief Engineer, there is a well equipped soil mechanics laboratory which has been carrying out useful experiments, including strength and weathering tests. The Chief Engineer pointed out that there was a great need for scientists expert in research.

In Lahore there also was special interest shown in developing studies of the hot-cold conditions experienced there. Research in this field may well influence the present by-law which insists rather arbitrarily on a 12 ft. ceiling height.

In East Pakistan the Mission saw an interesting experimental house with a bow-shaped bamboo-cement roof and wall panels of similar construction. Roof and wall slabs were 1-1/2 to 2 inches thick, and outside walls have a double skin for insulation. Further research into both bamboo and jute reinforcement should be valuable.

The production of cheap cement, perhaps from clinker, might obviate the use of imported cement, the price of which is very high, due to transportation costs.

Other fields of research considered valuable were forestry research (which should be co-ordinated with India's research in this field); and social and statistical research for housing and for community and regional planning.

The Mission recommends that a tentative housing (social-cum-technological) research programme should be studied by the Industries Ministry.

10. Problems of Training

Professional and technical education and vocational training are equally important in Pakistan in view of the large development schemes envisaged. The staff available even for the present programme, however, is far from adequate. The Mission found that a trade and vocational training programme is under consideration. There is no doubt that such a programme is badly needed.

Pakistan is in an even more difficult position than India as regards

professional training for architects and planners, because no school for this purpose exists at present in the country. The remarks made in Chapter III regarding professional training in India also are relevant to Pakistan, except that in proportion to its population, Pakistan is already employing a slightly higher proportion of architects and planners trained abroad, and has established a policy of sending abroad men up to 30-years old for extension training courses. It seemed to be agreed that post-graduate training was most important, but one of the chief engineers thought that undergraduate training was perhaps even more important in view of the lack of home training facilities in Pakistan. The idea of a special housing course was also discussed and found to be popular.

1. Programme for Concerted Action

This brief and incomplete account of Pakistan's problems in the housing field has touched on some of the more obvious difficulties and shortcomings, which appear to be well known to the Central and Provincial Governments.

The Mission believes that, in view of the magnitude of Pakistan's development problems, the United Nations should consider providing certain forms of technical assistance in the housing field wherever it seems likely that such aid will contribute materially to social and economic advance.

Before leaving West Pakistan the Mission prepared a memorandum which was discussed with the Joint Secretary, Ministry of Health and Works, and with senior officials of departments connected with housing and community development. In this memorandum the Mission suggested an investigation for a programme of housing development which would clarify the nature and scope of the country's problem, and at the same time form the basis of a programme of United Nations technical assistance.

This investigation need not be so elaborate as the one suggested for India, because the national and provincial administrative problems are not quite so vast and complicated. As in the case of India, however, the housing fields to be investigated should be equally comprehensive.

It is suggested that a technical and administrative investigation be conducted to determine a programme for concerted action in all the related fields of housing and community development which have been touched upon in this or in previous chapters namely: legal and administrative measures; financial formulae; city and regional planning techniques; housing research* (technological, physical, social, economic, planning); professional and technical training; and production and development programmes for building materials and equipment.

The range of experience required in the investigating team should be very wide, and there may be difficulty in drawing all the skills required from within Pakistan. Assuming that up to three experts, if necessary, might be obtained with the assistance of the United Nations, it is tentatively suggested that the following experts would be most needed:

(1) A housing economist-administrator to work on methods of housing finance, domestic and international, and on organization and administration, including the relationship between national, provincial and local authorities. This would help to lay the basis for a national policy and a broad programme for execution by decentralized agencies.

(2) A housing research technician of wide experience to help study the organization and conduct of research: national and international co-ordination of research; methods of construction and new materials; production and construction machinery; demonstrations prior to purchase; and documentation in this field.

(3) A professional in housing and town planning to help organize and obtain assistance for a programme of technical training, both in Pakistan and abroad.

These specialists could work with Pakistani experts, perhaps for six months to a year, to study the background for the first phase of a concerted programme and to work out further technical assistance possibilities with United Nations. As the same time preparations should be made to put into effect those parts of the Colombo plan which can be applied to housing and community development.

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* See Appendix D.

The large developments now operating in Pakistan seemed to show remarkable spirit and competence, and the Mission believes there is a good opportunity for harnessing the power behind these ventures to a nationwide housing drive.

CHAPTER V
MALAYA*

1. The Land and its People

Malaya has more than 53,000 square miles of land which is for the most part of poor quality; a large part of the country is mountainous. The rainfall is excessive, which is bad for many forms of agriculture. Compared with other regions of Asia, however, the relation between land and population in the Federation is not so unsatisfactory; its population has not yet reached the maximum size which the land, in its present state of cultivation, is capable of supporting.

Malaya has a population of over five and a half million people consisting mainly of Malays, Chinese, and Indians. The distribution is somewhat uneven, for five sixths of the population is concentrated in one third of the area of the country. The Malays are slightly more than the Chinese in number: almost one half of the population is Malay and more than three-eighths is Chinese. The Malays predominate in the rural areas of the north and the east, the Chinese in the south and west where the larger urban communities are located. Although the Chinese are outnumbered by the Malays, they control a relatively greater portion of commerce and industry. The Indians constitute about one tenth of the population, and are scattered all over the peninsula, especially along the rural west coast where they are employed as rubber tappers. Finally, Europeans constitute a very small percentage of the population.

For a country depending mainly on its primary produce and having only a few secondary industries, Malaya's population is not proportionately rural: one out of every three of its people live in a town or on the edge of one.

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* Throughout this chapter the name Malaya refers to the Federation of Malaya and to Singapore, both of which are Non-Self-Governing Territories. The Mission visited Singapore, Kuala Lumpur and surrounding areas in the State of Johore. It was felt that Singapore furnished sufficient material for an adequate appraisal of urban housing conditions, and that Johore Bahru and Kuala Lumpur and the surrounding areas gave a fairly representative picture of suburban and semi-rural housing in Malaya. An extensive inspection of completely rural developments was not possible.

The housing problem in Malaya is therefore decidedly more acute in the urban areas, although owing to the disturbed conditions in the hinterlands, the resettlement of displaced people has lately grown in importance. As elsewhere, there are many obstacles which stand in the way of a successful and speedy solution to these problems. Here, however, it is not so much the lack of funds for housing which formsthe bottleneck, as the combination of shortage of building materials, the high cost of land, the lack of skilled labour, and the absence of an effective centralized agency for planning and housing, either in Singapore or in the Federation of Malaya. The Mission found great awareness of these problems; for example, the so-colled Yellow Book* states that "Haphazard development of built-up areas which, in its early stages, is merely a nuisance, becomes in course of time a very great evil. The growth of urbanization in the Federation will inevitably lead to the assumption of wider powers by Government or local authorities to control it."

2. Exodus from the Country.

Owing to the population drift to the cities, the urban population multiplied at a rate far beyond the national capacity to provide for its housing. Lack of knowledge of elementary hygiene and generally insanitary conditions coupled with the overcrowding of the available shop-houses created a serious housing situation which became a major community concern.

The urban congestion was aggravated by the war, for people fled to cities in the south, like Singapore, in advance of the Japanese drive down the Malay peninsula in 1942. The population of Singapore has almost doubled in less than 20 years since 1931. Moreover, during the war there was practically no construction of civilian housing.

After the war, large numbers of the refugees remained in the urban areas because of the employment opportunities and the urban amenities the city offered. Those refugees who returned to their farms often found that their former homes were no longer safe as a result of the disturbed conditions. This led to the creation of protected settlements which accommodated part of the rural population.

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* Draft Development Plan of the Federation on Malaya, see Appendix K.

3. Organization for Housing and Planning

In order to understand the housing problem in Malaya, a brief discussion of the present administrative machinery is necessary. The Federation of Malaya was formed in 1946 as a federation of practically independent states with their own separate heads and legislative agencies. There is no central department responsible for housing and planning policy either in the Federation or in Singapore; the administrative machinery consists of a number of relatively independent agencies concerned with housing. The public works departments of the various States are in charge of the housing of government employees of the States. The Labour Department approves labourers' quarters on mines and estates provided the sites are approved by the Health Department. The Municipal Architect is responsible for the design of housing for Government employees of the municipality and of municipal low cost housing; maintenance of this housing is in the hands of another municipal agency. Resettlement projects for refugees are under the supervision of the Security Department. The Singapore Improvement Trust which has limited funds, staff, and powers, is engaged in real estate, street improvements and "economic" housing. The Attap Dwellings Committee of Singapore is concerned with slum clearance and the thinning out of congested areas. These various agencies are not required to co-ordinate their activities. The Federation has a small town planning office, but its function is mainly advisory in character. Housing and planning in the sizable Crown properties in both Territories have remained under the jurisdiction of the Crown.

4. Singapore, the City.

The Territory of Singapore, which includes the municipality and the rest of the island, has an area of approximately 200 square miles. In 1947, it had a population of about 950,000 of which about 680,000 lived within the municipality itself- giving it an overall density of about 35 persons per acre. Today, the city's population is estimated to be in excess of one and a quarter million people. A social survey of Singapore during 1947 revealed that almost one half of the population of the municipality was concentrated in about one tenth of its area, resulting in an average density of 143 persons per acre. In a group of blocks of the city, a density of 759 persons per acre was actually recorded in 1947, while today, some blocks near the downtown area are estimated to have a density of 1,000 persons per acre or more.

About one fourth of the available rooms in Singapore accommodate six or more people. Only 6 per cent of the population own their homes and about 22 per cent live in rented houses or a complete unit of an apartment or terrace house. The rest share rooms or cubicles with others, sometimes sleeping in corridors, kitchens, or on shelves over or under staircases.

About 100,000 people live as squatters on municipal land, in huts made of attap, old boxes, corrugated iron sheets, bamboo and cardboard. Sanitary conditions are deplorable and there is little or no water.

The present rate of house construction in the Territory can hardly catch up with the current rate of increase of its population, much less attempt to rehouse about half a million people within a reasonable length of time.

5. Singapore Housing Types

For the last century, Singapore has been predominantly a city of shop-houses, that is buildings that are used as both homes and shops. A shop-house occupies most of the area of a very narrow lot, except for small openings which were originally meant for airwells, but which subsequently became flues for cooking, or, in some cases were roofed over.

There are also two 2-story residential terrace houses with a yard in front. In the absence of control, some owners have converted their front yards into shop annexes and have subdivided the upper floors for rental purposes.

Another type of shelter is the tenement. These were built by the Government prior to the war. Some of them have stores on the ground floor, with separate stairs leading to the upper floors; floor space is rented out in cubicles. These tenements have common kitchens, bathrooms, and latrines.

Some low income labourers are housed in one-story "lines", mostly one-room units with communal sanitary facilities. Others live in plank and attap houses which may be comfortable to live in, if raised from the ground and located on an adequate site; Frequently, however, they are built directly on the ground and jammed so close to each other that they have become fire hazards as well as breeding places for disease and crime.

Finally there are the detached and semi-detached single-family houses of various sizes, types of construction and styles of architecture. These homes of the middle income groups have a bare minimum of yard space because of the excessive price of land; only the homes of the higher income group have large garden areas.

It should be pointed out that in recent years serious attempts have been made to introduce improvements in the conditions just described. The Mission was very much impressed by the superior quality of the housing schemes which have recently been designed and constructed in Singapore. Compared to the older schemes, the new ones display a better understanding of the use of materials and the disposition of space. There is a break from the traditional

use of thick masonry walls as a necessary requirement for thermal insulation. Light foam concrete blocks are being used economically for curtain walls where lightness is necessary. Rooms are better arranged for privacy, convenience, and safety. Windows and doors have been detailed for cheaper, faster and easier millwork and installation. Prefabrication of housing parts has been tried successfully.

The new housing schemes also demonstrate a more conscientious application of the principles of orientation to sun, wind, and topography. The interesting grouping and spacing of buildings; the provision of green spaces, paved pedestrian walks, plantings and play equipment; the gay variety of colours used for window and door trims all contribute to the pleasantness of these residential developments.

6. Need for a Singapore City Plan

As was found to be the case in other cities described in this report, here also there appears to be a need for a well conceived general plan. On the basis of such an overall city plan, for example, the streets in a housing scheme could have been designed as secondary and minor streets. Instead, some of the schemes are intersected by major streets, which should skirt the edge of the area, in order to preserve the unity and quiet of the development. With the help of a general plan, the selection of sites for the housing schemes also could have been adequately geared to desirable distribution of population densities and land use.

A functional comprehensive plan, based on a realistic appraisal of conditions and needs of the Territory and the objectives of its people, is urgently needed, in order to produce the right type of housing, in the right places, at the appropriate time. Logical plans based on these conditions, and directed towards these goals should be prepared, while the implementation should take into account the people's ability to pay.

The Mission encountered widespread understanding of the necessity of co-ordinated planning; a brief historical survey shows that officials in Singapore have long been concerned with bringing about the needed improvements. As early as 1907, a survey was made of the sanitary conditions in Singapore, while in 1918, a Housing Commission confirmed the findings for 1907, and reported that "the poorer classes could not afford to pay more than a share of the rent of a house".* A committee which was appointed in 1938 to consider the housing problem reached the same conclusions.

In 1947, when it was decided to take up the work of this committee again, an excellent report was prepared outlining very clearly what should be done. In indicating the need for planning, the Singapore Housing Committee recommended: 1) the institution of a planning survey with emphasis on housing statistics; 2) a study of population characteristics and movement as a guide for town planning and town extension; 3) consideration of traffic problems; 4) the organization of a planning

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* Report of Singapore Housing Committee, 1947. See Appendix I.

agency with more adequate powers to carry out improvements; 5) the preparation of a master plan; 6) control of land uses and land values to prevent and remedy land speculation; and 7) the execution of planning proposals according to a workable timetable. It also made suggestions on the renewal of land leases, allocation of land revenues, disposal of undeveloped land, and control of building materials.

The Mission expressed its agreement with the committee's suggestions, and recommended that they be carried out. It is encouraging to note that the Territorial Government recently engaged a British planner to advise on the steps to be taken.

7. The Malay kampong

By comparison with the other countries visited, especially India and Pakistan, rural housing in Malaya presents fewer problems. The Mission received the impression that on the whole the Malayan peasant normally leads a happy and healthy life in his kampong or community, apart from the present disturbed conditions. These have resulted in the regrouping of some of the smaller kampongs into new, larger, protected townships called reservations; it may be that out of this development an opportunity will arise for a permanent social and economic regrouping of rural settlements and townships.

The typical kampong consists of a fairly loose grouping of housing around an open space which forms a market centre and meeting place. The houses are usually of wood, often raised on stilts above the ground sufficiently to provide a place for storage and for the shelter of domestic animals. Roofs are usually of attap and sometimes of tiles; walls are

of wood or bamboo, palm or reed matting. The houses are well ventilated and protected from the rains and the monsoons.

The kampongs around Kuala Lumpur had quite generous living space in their houses, and ground space enough to grow food and fruit-bearing trees. The suburban kampongs, however, tended to be crowded, with squatters' shacks in the spaces between the better houses. Many of them had, in fact, become urban slums.

8. Resettlement Projects in the Federation of Malaya.

The Mission inspected several "refugee" resettlement projects near Kuala Lumpur.

The Jinjang Project, near Kepong, has two sections: the South, which has 4,000 families and the North, which houses 6,000 families. There are about six to seven persons per family, giving a total population of about 60,000 to 70,000 people for the entire project. Jinjang is a type of commuters' township composed of semi-detached dwellings. Each shelter, built of timber posts and asbestos roofing furnished by the Government, costs approximately 250 Straits Dollars (approximately $83. U.S. or £30.). The residents are provided with a school, a padang or open space, shops, and bore-hole latrines. The project is under military protection, and consequently its central feature is a police station.

The Sungei Buloh Project, which is more isolated, is a fenced in township for displaced agricultural workers from the hinterland. Each family is given two acres of land to till outside the fence, a one-fifth acre plot inside the fence for a house, and a grant of 250 Straits Dollars. The occupants use timber, bamboo, and attap for building

materials. Before and during the construction of the house, the families and livestock are given temporary shelter for two weeks in a huge bamboo-attap dormitory.

There are several features worth mentioning about these resettlement projects.

In the first place, the rural population which used to be scattered throughout the countryside with little or no social and cultural contact between neighbours, has been grouped into communities provided with services and amenities. It is true that the projects visited could be improved from the point of view of site and of building design, but this is secondary in importance to the creation of a community organization to replace the isolation which has retarded the progress of the rural population in the past.

Secondly, the Government is utilizing the "aided-self-help" principle in the solution of the housing problem. The Government supplies the sites, utilities, posts, and roofs, and the people do the rest themselves with guidance from the Government whenever necessary. The refugees use their own materials for sidings, doors, and windows, and supply their own labour to erect the whole structure. As they become more prosperous, they can improve on their homes by building an annex. This method of financing housing requires only a small cash outlay by the Government, and available funds can therefore be utilized to serve more people.

It is also encouraging to note that private agencies, also are helping the refugees to get settled in pleasant and safe surroundings.

One of these agencies has been giving grants and building materials to refugees.

Having seen what was done in other countries* in their refugee camps, the Mission believed that the camps at Jinjang and Sungei Buloh could have been improved, without adding to expense, if the refugees had been given more technical guidance in the construction of their homes. The provision of instructions about details of roofs, walls, doors and windows, for example, could have resulted in improved structures. Small training centres for carpentry, tinsmithy, masonry, etc., could be established so that refugees could learn other vocations in addition to farming. Co-operatives of various sorts could have been introduced for the mutual benefit of both the refugees and the management. And lastly, a planner might well have been consulted about the technical details of the project layout.

9. Legislation and Responsibility.

On the basis of its findings in Singapore and the Federation,** the Mission recommends that a housing policy, particularly in matters of finance, town extension, slum clearance and community planning, be developed simultaneously with a more comprehensive town and country planning policy. To achieve this, it seems important and urgent to enact legislation which will fix the central responsibility for housing and planning development in an overall agency.

In the case of Singapore, the Planning Consultant*** is advising on legislation and the executive machinery for planning. It is suggested that similar action be taken for the Federation of Malaya where no modern town and country planning legislation has so far been contemplated.

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* See Chapter III, para 6 and Chapter IV, para. 5

** See para. 3 of this Chapter.

*** See para. 6 of this chapter.

Building By-Laws. The Mission recommends that minimum building standards, structural specifications, methods of construction, and details of design be thoroughly reexamined, both for Singapore and for the Federation, in order to determine whether they should be revised or improved to bring them into line with modern building and planning practices and, more important still, to make them appropriate to present local needs, capacities, and aspirations. These building by-laws could be codified later for convenient and effective application.

10. Advantage of Regional Planning and Housing Policy

It has been the experience in other countries that defects of cities will become worse with the passing years, and city maintenance will cost more and more - unless something is done at an early stage to remedy the defects or prevent them by way of competent planning, for which an adequate staff is available. The Mission recommends for Malaya the simultaneous planning of the different municipalities, and the enlargement of the present planning staff, which should be given sufficient powers to make its work more comprehensive and effective. It should be responsible not only for town planning as such but also for regional planning. The Mission believes that a regional policy based on a Federal economic policy for the states as a whole should be formulated to serve as a guide to the planning staff.

It is recognized that the political administration of the Federation is rather complex, but the Mission is of the opinion that there would be great advantage in dove-tailing, as far as is practicable, a fully developed regional land utilization policy with such policies as those governing the establishment of new refugee settlements in various parts of the country, or those dealing with communications, power supply, etc. Regional planning should be the joint responsibility of the States and the Settlements, and should consider, analyse, and inter-relate a great number of separate, complementary, and often conflicting needs. The relative importance of these needs can only be ascertained by the authorities intimately concerned with

their fulfilment, who are responsible for carrying out the decisions.

A regional land planning policy should have as its objectives the development of the physical, economic, and social resources of rural areas to supplement those of urban areas, and vice versa. It has to be realized that the city cannot function properly by itself; it is dependent on the surrounding areas for its raw materials and labour. Likewise, the countryside is dependent on the city for various amenities and conveniences which it cannot provide by itself. In the Federation of Malaya, the regional planning responsibilities could be centred in the Federation, with the responsibility for urban and rural development of a local character remaining with the States. The Mission realizes, of course, that this is a matter for careful investigation in consultation with technical experts on planning, administration and economics.

11. Central Housing Policy and Staff

It is also obvious that there is urgent need for a central housing policy established along the same lines as that of planning, and for a central housing staff to undertake the work involved in such a policy. This staff could have the responsibility of formulating overall requirements with a view to effecting a balanced development and a co-ordinated housing programme for the Federation. Like the central planning staff, it could act as a technical service agency for the States and municipalities, pending the training of a sufficient number of technicians to fulfil local requirements. As soon as local planning and housing staffs are formed, the work could be initiated on the local level, subject to guidance on the Federal level.

At present this applies only to the Federation of Malaya, for Singapore is virtually a municipality in itself. When full federation is achieved, the central service agency suggested by the Mission could serve not only the limited Federation of the Malay States and Settlements, but Singapore as well.

12. Applied Research and Native Materials

Mere examination of modern practice is not enough. The adoption of modern techniques used elsewhere with little regard to local conditions and needs is apt to lead to highly unsatisfactory results.

The people with whom the Mission conferred in Singapore and the Federation of Malaya believe that there is need for research, i.e. applied building and housing research focused on improved use and development of local building materials, and on improved building design and low cost housing, both urban and rural.

Research into building materials may be directed along several lines: new and better application of existing materials, or their derivatives, in order to protect human beings from adverse effects of tropical climate such as heat and humidity; production of substances or methods to protect such materials from the tropical elements; and development of techniques in the use of untried and waste materials.

Malaya, for example, has a vast wealth of timber; seventy-five percent of its total area is covered by forests and much of that area is known to contain valuable timber - potential material for housing.

The Mission visited the Forestry Department near Kuala Lumpur, where fundamental research into the strength, rigidity, durability, etc., of timber is being carried out. The work being done here has disclosed that there are many possible uses for timbers previously described as "unwanted", merely because they were untried.

The present activities of the Forestry Department could be extended beyond fundamental research to applied research. The Government could erect and operate pilot plants for the manufacture of plywood, fibreboard and other secondary building materials - thus finding uses for many timber species which may not have any commercial value at present. Fibreboard manufacture has the advantage of making use of almost all parts of the tree including its branches. The Government could also establish experimental stations for the storing, curing, and seasoning of timber which would

do much to solve the present shortage of good building materials in the Federation.

There are also other materials which may be subjects of research. Bamboo, if flattened and cured, could be more useful for covering, and if properly treated, could reinforce masonry or plaster. Coconut husks could be converted into roofing shingles, wall boards, or floor tiles. Foam concrete blocks, unburned clay tiles and stabilized earth construction have been tried and found successful under certain conditions.

Engineering research of this kind could, with advantage, be combined with architectural research for evolving type designs and structural details; and with scientific research, for the analysis of humidity and thermal comfort conditions involving ventilation, air conditioning, heat insulation, and isolation. The Mission suggests, therefore, that various fields of applied research in Malaya be investigated with a view to establishing a stat on for this type of work. It also suggested that efforts be made to use to the full the advice, services and findings of the Forestry Department, the university and other technical schools, and the Building Research Stations of Australia and of the United Kingdom.

13. Economics of Housing.

Research could include a study of the economics of housing. Although the work of the Singapore Improvement Trust has been excellent, its housing schemes as well as those of the various municipalities, are far beyond the means of most of the population. For this reason, the actual housing needs of Singapore have not been met. It might be said that the Trust has been scratching the surface of the housing problem and that the hard core has yet to be reached.

The argument has been given that the Trust has been constructing only "economic" housing (or housing without financial loss), and that by providing as many decent houses now for those who can afford to pay for them, there is that much more vacated housing accommodation available for the less affluent, so that , it is said, this will help to solve the low-income housing problem.

The same financing policy was also assumed when the Government published the White Paper of 1949 which recommended "the establishment of a Housing Trust with powers to lease or purchase and hold land and buildings, to build houses, shops and shop-houses, and to sell, lease or let land and buildings. In order to employ the funds at its disposal most effectively, the Trust would for some while probably confine its activities to the building of small houses and the development of building sites for quick resale". In the leasing and renting of buildings, it specified that "economic rents are to be charged on Trust properties, i.e., such rentals as would permit payment of interest on money loaned, together with amortization of the capital."

However, it should be mentioned that housing has been considered a social service of Government for several years. For example, the Housing Committee Report of Singapore in 1947 stated that the Government accepted the fact that "the provision of suitable sanitary housing and the planning of suitable siting and layout is impossible under existing conditions and standards of earnings ... unless it is subsidized by Government and local authorities." It went further to say that "no scheme to alleviate overcrowding and to clear slums can succeed unless buildings are provided which are let at 'uneconomic' rents. Good housing is, however, a good investment, even though it may not provide 'economic' rent." The Committee proposed that the subsidy might take any of the following forms: initial grants, provision of deficits for payment of interest, exemptions from assessment rates on land and buildings, and provision of utilities and services at cost.

One recommendation in the White Paper, which is rather significant, would "require the owners of vacant lands in appropriate cases to develop them, or in default to pay a special 'Development Rate' which would accrue to the Trust." It was found that much of the available land for urban development in the Federation is being held in an undeveloped state for speculative purposes, which has resulted in a prohibitive price for land in most municipalities in the Federation. The practice of requiring owners to develop their land, or pay the "Development Rate", if in default, will remedy to some extent the practice of unearned increment on land, and will,

if geared to town planning, result in stabilized real estate values and orderly development of urban areas.

The Government realizes the need for the large investment which will be required for urgently needed housing. The Yellow Book of 1950 * quoted the sum of 150 million Straits Dollars, (approximately $49.5 million U.S. or 17.5 million pounds) which is exclusive of the amount required to house civil servants. It was admitted that "it would be beyond the capacity of the Government to finance or administer building operations of this magnitude", and the most useful contribution that the Government can make to the solution of this problem would be "by stimulating and facilitating private enterprise in this direction." The Mission believes that this proposal will require detailed exploration and study of local conditions; and if found feasible, will prove most helpful in financing housing, along similar lines which have proved successful in other countries.

The Mission noted, however, that private capital in Malaya has been rather hesitant to invest in housing, especially low cost housing. Taking into consideration the cost of material and of land and the skill of available labour, the final cost of houses becomes prohibitive to the thousands of lowly paid labourers.

The standard of living of these labourers could be raised so that they may be able to earn more and pay for better housing facilities. Subsidies also could be provided in the form of rent assistance - whereby the Government makes up the difference between "economic" rent and what the

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* See paragraph 1 of this Chapter.

tenant can afford to pay. This subsidy could be applied either to reduce the rent of the house or to increase the rent money of the tenant. This is easier said than done. Before final decisions can be taken preliminary investigations will be needed into the financial and economic structure and policies of the country.

Subsidized Housing for Government Servants. The Federation has constructed subsidized housing, but mostly for its civil servants - by providing them living accommodation at nominal rent. In spite of this subsidy which amounted to about 4 million Straits Dollars (approximately $1.3 million U.S. or £ 467,000) in 1949, there is still an acute shortage of accommodation for all grades of the Government service. Quarters are constructed for senior officers, subordinates, and minor subordinates in accordance with existing deficiencies of accommodation for these three categories. The net result show, nevertheless, that housing for minor subordinates is the greatest need, - not because fewer houses are assigned to them, but because there are, in the first place, so many more employees of this category needing housing. The needs of the non-government wage earners, many of whom earn less than Government employees, and who are greater in number, are equally if not more pressing.

Housing on Estates. Housing for labourers on estates is subsidized by employers. The Mission visited two such housing schemes, one for the labourers of a rubber plantation and the other for the workers of a mining estate just outside Kuala Lumpur. Scarcity of labour is no doubt a spur to the improvement of housing conditions on the estates; nevertheless, credit is due many of the planters for the trouble they have taken to improve plantation housing - breaking away from the old barrack ranges and arranging comparatively roomy houses around attractive forecourts or squares.

House accommodation for labourers employed on estates in the Federation is governed by the Labour Code. Permanent accommodation must be in general accordance with one of the "standard designs" prepared by order of the Commissioner for Labour and approved by the Health Department. Permission for the use of other designs must be obtained from the Commissioner.

Minimum building standards * for this type of housing have been in force for more than 10 years, and are being raised periodically. It was gratifying to note that in the estates inspected, the new housing schemes were above the minimum requirements. One of them has a commendable community layout and is provided with a school, a dispensary, and a nursery.

Temporary lines also are erected in accordance with plans approved by the local health officer. It was estimated that about 15,000 estate houses in the Federation were approved and constructed in 1950. Defective details ** of temporary lines, considered likely to endanger the health of the labourers are ordered removed by the Commissioner of Labour at the employers' expense.

Subsidized Production of Building Materials. It has been stated by some high officials of Malaya that the bottleneck in housing for both the Territory of Singapore and the Federation is not so much the lack of funds as the shortage of building materials and the dearth of skilled labour. The Government could investigate the feasibility of government investment and subsidy for the production of building materials and the training

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* See Appendix F: Minimum Requirements for Housing on Estates, Kuala Lumpur,

** See Appendix G: Minimum Requirements for "Lines" (Barrack Ranges) on Short-term Mines in Selangor.

of building labour for the purpose of increasing and improving low cost housing for the masses. Government or semi-government corporations could be formed to produce lumber or its secondary products such as fibreboard and plywood, cement, concrete blocks, bricks, etc. to be used exclusively for low cost housing - a field which cannot profitably be covered by private enterprise.

The Mission was often asked about the economics of "cheap temporary housing" as an expedient solution to the great and urgent demand for shelter, especially in overcrowded cities; the Mission, unfortunately did not see any of this type of housing, during the course of its tour. It felt that "cheap temporary housing" usually is neither cheap nor temporary. Maintenance and repairs were expensive, and many of the "temporary" houses built several years ago are still being used, because there is no other shelter available for the occupants. Moreover, judging from the sanitary conditions of these projects, they should not even be considered as housing.

If these houses were owned by the occupants themselves, it would be a different story. In this case, an occupant has an interest in the house and has the incentive to improve it whenever he has the chance and the means to do so.

Other possibilities for research into the economics of housing are many: home building co-operatives, government insurance of private building loans, aided self-help, tax exemption, etc. All of these methods of utilizing available funds to help housing are worth investigating, and the little additional amount invested into research is money well invested indeed.

14. Social Research for Housing.

The Mission believes that there is need for investigation social organization for housing, such as that which relates to housing management and tenant selection; or the effects of "Neighbourhood Unit" design and so called "contemporary architecture" on the traditional habits and life of the people. The results of these studies could be put into a form which would be useful in the design and management of future housing schemes. This type of study is considered of great social significance. It is important to point out that the tendency among technicians trained abroad to impose foreign ideas and methods of procedure (even if accepted) with little regard to peculiar native traits and traditions should be controlled. It is not meant to imply, however, that neighborhood unit, design and contemporary architecture should not be introduced, or extended, in Malaya. It is suggested rather that these modern methods be adapted to the land and the way of life of the people concerned. There are already encouraging beginnings of such "planning for the people" being made in new housing schemes in Singapore and Kuala Lumpur.

15. Training Needs.

Compared with the other countries visited, the Mission found that Malaya has the greatest proportion of qualified engineers, planners and architects. In addition, technical assistance and advice is readily obtainable from both the United Kingdom, through the Colonial Office, and Australia through the Department of External Territories. But this is not enough to cope with the amount and the difficulty of the work ahead.

To get all the needed additional technicians from abroad is not possible, because such men are also needed for the planning of their own communities and the housing of their own people. It is obvious, therefore, that if more technicians of the type indicated are needed in Malaya, local people should be trained to direct the complex process of home construction and community building not only to meet present demands but also to insure the quantity and quality of future construction and future housing. These men could be given further training in planning and housing in order to prepare them to lead others in this field of endeavour; either they could be sent abroad for their education and experience, or they could be taught in Malaya by qualified teachers from outside the country. The training abroad could be in the form of post-graduate fellowships to study housing and planning, and would be most useful for professionals who have had some local experience. This training could be in the form of courses in a post-graduate school, or in the form of practical application in the field, or both. Local training could take the form of refresher courses in modern planning and housing practices conducted by specialists in various fields, or of special courses in established universities.

The Mission believes, however, that in Malaya the more acute shortage of trained personnel for planning and housing is not at the top level, as is the case in the other countries visited. The most crying need is for vocational training of local building tradesmen and craftsmen and for technical courses for foremen and clerks of works. Malaya is also very much in need of good carpenters, masons, glaziers, plumbers, electricians, etc.

16. Conclusion.

The exodus of the rural population to the city has created congestion of people and factories and buildings.

The Mission recommends that in order to prevent further uncontrolled industrialization in rural areas, land speculation, and the purposeless concentration of urban activities, and in order to prepare for a better future, planning measures based on effective legislation should be developed.*

There will be need for housing based on such planning. The Mission recommends that the responsibility for housing the masses be simplified, and focussed. In order to prevent a further increase in the number of the homeless, homes must be provided fast enough to meet existing needs. However complex the housing problems may appear, the Mission feels that in Malaya, as elsewhere, they should be treated as one integrated problem and that its planners should treat the areas in terms of regions, and the cities in terms of people and of their lives and aspirations.

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* See paragraphs 6 and 10 of this chapter.

CHAPTER VI

THAILAND

1. Introduction

The time available for an examination of the housing conditions in Thailand was very limited. It is a vast country and the Mission was able to see only a small part of it - one of the typical villages and one of the new resettlement projects within range of Bangkok, the town of Nakorn Pathom, and the city of Bangkok itself.

The population of Thailand is about 18 million. Climatic conditions over most of the country are rather like those in the Federation of Malaya and in Indonesia; it is warm and moist for most of the year and there is no really cold weather. The greater part of the country is very flat, much of it is liable to floods, and drainage is a problem. Agriculture is devoted mainly to the growing of rice.

Thailand has not been confronted with the tremendous problems of refugee settlement which India, Pakistan and the Federation of Malaya, have had to contend with, although during the war there was a considerable influx of people from the countryside to Bangkok and some of the smaller towns.

2. Organization for Housing

The Ministry of Public Welfare which is responsible for education, housing and sanitation, is the centre of a new but growing interest in social problems in Thailand.

A Department of Housing was created in 1949: the importance of government action in improving the living conditions of the masses has only lately been realized, and it appeared to the Mission that the Department was not yet adequately staffed to carry out its programme. The design and execution of housing schemes is undertaken by the Ministry of Public Works, or by the municipality, in the case of Bangkok, in co-operation with the Department of Housing at the initial planning stage.

Town and country planning also is the responsibility of the Department of Housing but a definite policy has not yet been developed.

In the rural reclamation developments, one of which will be described later in this chapter,* there is close co-operation between the Ministry of Agriculture and the Department of Housing; the design and construction of buildings are in the hands of the Department of Public Works.

3. Legislation

A town planning bill has been drafted but so far there are no town or country planning regulations in force. Certain building by-laws for new buildings have been enacted but the Mission was informed that in Bangkok there are no regulations concerning unsafe or insanitary structures, spacing of buildings or overcrowding. There is a land acquisition act which enables land needed for public purposesto be expropriated; however, no legislation exists to check speculation in land values.

Consequently, the efforts of the Government and of the municipality of Bangkok to relieve slum conditions are seriously frustrated. The Mission recommends that the whole field of legislation affecting housing and town planning be reviewed in the light of recent experience in other countries where similar problems exist.

The difficulty facing the Government appears to be that the country has as yet little understanding of the possibilities of housing and planning so that there is little public support for its efforts. Land acquisition for housing is difficult; the Ministry of Public Welfare has sponsored small schemes, but it is not equipped, legally or technically, to work out a comprehensive programme.

4. Housing Standards

In the building by-laws for Bangkok certain standards for new houses are mentioned. For instance, the minimum floor area for a living room is 100 sq. ft., and the minimum width 8'4". Ceiling heights have to be at least 10'0", and wall openings not less than 10 per cent of floor areas. There are also regulations dealing with the height of the floor above the ground. Every

*See para. 6 of this chapter.

house must have one latrine outside the house unless a water closet has been installed. The municipality has adopted these standards in a housing scheme now under construction, and has provided two living-sleeping rooms in the smallest houses.

5. The Thailand Village

One of the members of the Mission paid a visit to the village of Nondindeng, which means swamp-red-earth, and indicates the nature of the terrain on which it is built. This village, which has a population of about 4,000, is divided into several districts which are in turn divided into little hamlets (moos), each with a population varying from around 100 to 400 people. A village of this kind is considered typical of rural Thailand.

The home and office of the headman of the village is located in the market square which has little shops grouped about it. Each day there is marketing in the morning and evening, when people exchange their wares.

The houses in the hamlets are of timber, with timber floors raised about four feet above the ground. The cattle are kept beneath the floors. There is always a large verandah, well protected by a low overhanging roof, which is used for living and sleeping. Usually there are one or two rooms, with doors and windows, but these are almost invariably used only for storage. There is an open kitchen on the same level but under a separate roof, and as there is no chimney, the underside of the roof gets very black from smoke.

Sometimes more than one house is built on the same platform. In this case, the houses are arranged around a square open space in the centre, which serves for communal family living. In a multiple house of this kind visited by the Mission the families were all related.

Roofing is mostly of attap (reed thatching) but occasionally concrete roof tiles are used. Timber, and sometimes bamboo, is generally used for partition walls. The latter is dangerous because of plague which takes many victims. As the people cannot be ordered by law to remove the bamboo walls and replace them with structural members, the headman and the District Officer have to do their best by persuasion.

When a new house is built the family has to buy the materials for it, but the people of the hamlet help each other with their labour. The building cost of a house for a family of five is now as much as 5,000 to 6,000 ticals (approximately $232 to $279 U.S. or £79 to £100). A hired labourer earns 700-800 ticals (approximately $33 to $37 U.S. or £11 to £13) a year. When a son marries he usually leaves his parents' house and builds a home of his own.

In the villages visited, the houses, except for the floors, were not in good condition; most of them, especially the multiple type, were very old. There seemed to be no serious overcrowding, however, for the verandahs are spacious, and seldom more than five or six people lived in each house.

A family usually owns three or four pairs of bullocks, some pigs and about 50 rais (25 acres) of land. There is one rice crop a year, and no other kind of crop. The rice is stored in small sheds away from the houses.

In the rainy season, when there are many mosquitoes, malaria is the most common illness. Scabies is also common. More than 50 per cent of people over 40 die of tuberculosis, and 20 to 30 per cent of deaths are due to intestinal diseases resulting from the use of contaminated water.

Drinking water comes from wells, and bathing and washing are done in rivers or brooks. There are no toilet conveniences. There is nearly always, just at the foot of the steps to the verandah, a large earthen jar in which water is kept for the purpose of washing one's feet, in order to avoid soiling the floor of the house.

Most of the houses are surrounded by bamboo and other trees. In the rainy season the village is likely to be flooded. Few people can afford the more attractive raised houses; nor can many people afford to keep their houses in good repair.

Rural Resettlement

In the Government's several projects for rural resettlement, an effort is being made to develop the resources of the rural areas and to increase substantially the output of rice. It is important to note that the social

aspects of these developments are not being neglected. There have been two rural social-economic surveys, one in 1930-1931 and one in 1935-1936.

Although the resettlement schemes are not yet being undertaken on a very large scale, they are very interesting as pilot projects. The Mission visited the Banpakong settlement, which was initiated in 1943 by the Ministry of Public Welfare in co-operation with the Ministry of Agriculture.

Settlers are given instruction in planting rice on land which has been newly reclaimed from the sea, and are provided with facilities for building their own timber houses in accordance with standard designs. These houses are raised well above the ground, so that there is space beneath for a store and workshop. The deck or platform is large enough for the traditional verandah space and for a single room about 11' x 11'. This can be expanded to double the size, partitioned as required, thereby providing a total area of about 250 sq. ft. which the more advanced settlers will no doubt use for sleeping purposes and not only for storage, as in the village just described. A separate annex, about 10' x 8' provides for a kitchen and water closet (squatting latrine piped to a removable container, and space for personal washing).

The Mission was informed that the income from the plots, which vary in size from 10 to 25 acres, would average 4,000 ticals (approximately $186 U.S. or £66) per annum for a 10-acre plot. Materials for a one-room house would cost 4,000 ticals, or 8,000 including hired labour, but it is assumed that many families will help each other to build their own houses under the supervision of the Department of Housing. Timber construction is simple: there are only four joints, and most of the members are nailed. Roofs are covered with light-weight cement tiles.

The Government makes a grant to cover the cost of materials, and this has to be paid back within five years, without interest. In other words, a family building its own one-room house would have to pay an average of 800 ticals per annum (approximately $37 U.S. or £13), or one fifth of the income yield expected from a 10-acre plot. Bamboo houses are not allowed on these Government settlements, so that only the more hard-working and provident are able

to benefit from the scheme. Settlers are drawn from the surrounding districts but also, in the case of Bangpakong, from Bangkok and its surrounding townships, to which many rural families migrated during the war.

The Bangpakong settlement is one of many sponsored by the Thai Government between 1941 and 1950 to "develop and utilize uncultivated lands". A geographic plan for agricultural development was devised by the Public Welfare Department to divide these lands into five regions. The total area of the settlements is 850,799 acres, and at present the cultivated area comprises about 17,830 acres, on which live 3,245 families, or a total of 13,222 settlers.

The Bangpakong project, although at an early stage, is an encouraging one, and the Mission believes the experience acquired here would be helpful to many countries in this and other tropical areas.

The community development policy includes the provision of a primary school on each settlement (primary education is compulsory for children from 7 to 11 years of age); a manager's office (large enough to function as a small meeting hall); and buildings for stores, including a communal granary for rice. A small school is already functioning in the Bangpakong settlement.

7. Housing Shortages in Towns and Cities

The real housing shortages are in the towns and cities, many of which have great difficulties with drainage and sanitation.

Bangkok, like Palembang and Bandjermasin in Indonesia, has problems similar to those of certain towns in the Netherlands, with regard to the necessity of lowering the water level and keeping it under control, and the same resulting problems of sewage disposal. The water difficulty makes a sewerage system very costly and hampers the natural absorption of excrements in the soil.

The city of Bangkok is threaded with canals, in which the people wash themselves and their clothes, swim, and too often dispose of their household wastes. The bucket latrine system for disposal of night soil has lately been abolished. Night soil is mostly disposed of in septic tanks, cesspools, or in the open water of rivers, canals or ditches. The same water is not infrequently used for drinking, especially in the case of the great number of people who live in boats on the rivers and canals.

A water supply from common taps is provided in most of the poorer living quarters of Bangkok. This certainly is a great improvement, although there is still a danger of contamination during transport, or in the "tap-houses" of the consumers. The sanitation problem is extremely serious in Bangkok, and very difficult to solve because the city is liable to floods.

The population of Bangkok, including its straggling suburbs, was just under a million, according to the census of 1947. Bangkok "town", the more densely built area where most of the worst living conditions are found, had a population of 691,000 in 1947 and is believed to have grown to over 740,000 today. The annual rate of increase is 2.4 per cent.

The number of new houses being built is not keeping pace with the increase in population, and overcrowding has become acute. No housing survey has been made in Bangkok and no programme for subsidized low cost housing is yet afoot.

The Mission was taken by the Department of Public Welfare to see what is regarded as a typical slum area in the city; it is typical of urban conditions in many tropical countries: there are dirt roads, unpaved drains overflowing with stagnant water, ramshackle timber and corrugated iron buildings of one or two storeys, congested inner courts behind street frontages, and no regular piped water supply. Stand-pipes, rented from the City Authority, are provided occasionally by property owners, who sell water to tenants, presumably at some profit.

It is believed that the average population per house in such areas is 10 persons or more. Slum clearance and rehousing, as is so often the case, are made more difficult because of the high price of land. In rural areas it is usually not more than six ticals per square metre, but in the outskirts of Bangkok it is 500 ticals (approximately $23 U.S. or £8) per square metre. Rents are very high and the payment of an extra amount of money by the tenant ("key money" - or "tea money" as it is called in Bangkok) in order to procure the rental of the desired space, is common practice.

The urban housing developments sponsored by the City Authority consist of two schemes for government servants and teachers, let at concessional rents. The chief of these is the Ranganam Estate, consisting of narrow-fronted, two-story terraced houses, with a living room downstairs, a sleeping room upstairs, and a kitchen and closet in a low wing opening on to an enclosed back yard.

Town planning, in its more limited sense of "civic design", has been sporadic. One ambitious scheme was carried out just before the war and is interesting because it was associated with a slum clearance scheme. This is the Rajadamnern Avenue Project, which was developed on Crown land. The avenue has a double track highway, each track over 80 feet wide, which seems considerably more than enough for any motor traffic that can ever be contemplated. (It is a pity that more space in this grandiose avenue could not have been devoted to a green boulevard with flowering trees.) It was designed as a shopping street, but this has not been a success. The result is that instead of being a gay, active boulevard, it is a wide and empty street with little motor traffic and few people. The reason may be that this new shopping centre - some two miles away from the very congested but popular traditional centre in the heart of the old city - was not conceived as an integral part of a major residential quarter which could feed it and give it life.

This difficulty in creating a new centre has been experienced before in cities which have not prepared a development plan based on a comprehensive survey of social and commercial trends.

One good point about the Rajadamnern development is that it succeeded in clearing a slum without depriving people of their homes. Arrangements were made to rehouse the displaced families in better houses.

Bangkok is a many-centred capital city: a port, a business centre, an industrial centre, a Royal centre - there is the fabulous Royal Palace on the banks of the river Menam - a religious centre and a government centre. Since the war it has become an international centre: the United Nations headquarters of the Economic Commission for Asia and the Far East, which it is hoped will be instrumental in helping the countries of the South and South-East Asia area to pool their talents and develop constructive ideas and new methods for tackling the housing difficulties hindering their progress.

8. Research and Training

Apart from the rural social surveys mentioned previously, no housing or building research has been attempted in Thailand. Building materials do not seem to be scarce, but there would seem to be scope, for example, for research into the strength, quality and preservation of native timbers, and into new uses of bamboo.

As part of an all-round attempt to develop the housing resources, the Mission recommends that an enquiry should be made into possible useful fields of research, with a view to improving low cost housing. Many of the fields of research indicated in Appendix D would be applicable to Thailand.

In the field of professional training, there is a university in Bangkok and a School of Architecture which is training 70 students at present. There is no training in town and country planning because scarcely any town and country planning is being undertaken. Until planning becomes part of central and local government policy, it cannot be expected that professional training in planning will succeed; but it is believed that there would be considerable benefit in awarding annual post-graduate fellowships in housing and town and country planning to technical people already engaged in government service in fields related to housing and planning. Some special courses in housing technique for students of architecture and students of social science would also be of great benefit.

9. First Steps to Better Housing.

Since the Mission's stay in Thailand was too limited for thorough study, no definite suggestions for improvement can be offered. The Mission believes, however, that the first step for the Government to take is to obtain a clear picture of the nature and scope of its housing problems; the next step would be to prepare a national housing policy and programme. A study would be made of the several possible methods of housing finance which would be appropriate for Thailand, from the economic as well as from the social point of view.

In an informal memorandum to the Minister of Public Welfare, the Mission suggested that the Government should make a request to the United Nations for an expert in housing administration, if possible with experience in both the sociological and economic aspects of countries akin to Thailand, who could study the situation with Thai officials and experts in the various fields connected with housing. He would have to consider with them the immediate legislative and administrative measures necessary; the possible financial scope and the appropriate financial formulae; the staff requirements in the Department of Housing (should this Department assume its full role as a central authority for housing and planning); the training requirements and the steps necessary to train technicians and others for the task; the gaps in the field of technical and social knowledge in housing and planning; and the first steps in a co-ordinated programme of social and technical research.

In fact, his task would be to unite the various skills available in Thailand in a concerted programme of housing activity. It is suggested that he might also be asked to advise on the various possibilities of United Nations technical assistance.

The authorities whom the Mission met in Thailand seemed to be convinced of the necessity for strong measures in housing and planning, and for the development on a much larger, more comprehensive scale of the small beginnings that they have made.

In Thailand, as in all the countries visited by the Mission, the necessity of fixing the focus of responsibility was of manifest importance. The responsibility and directive for housing and town and country planning should rest with one government authority, whether it is the Ministry of Public Welfare or some other authority. In the opinion of the Mission, the authority should be concerned primarily with social as well as purely technical affairs.

There are in Bangkok - and as far as could be judged, in many parts of Thailand - living conditions which on ethical, social and hygienic grounds are no longer acceptable. By technical means and social methods these living conditions could be greatly improved. Social policy, along with financial policy, should be recognized as the foundation for technical solutions: a survey of social and material resources should precede execution

CHAPTER VII

REPUBLIC OF INDONESIA

1. Introduction

The visit which two members of the Mission paid to Indonesia was so short that it was not possible to get more than a limited impression of the housing problem of the vast Archipelago as a whole.

The Mission is aware, however, that housing conditions in the various parts of the Archipelago differ considerably, and that the places visited in Western Java (Jakarta, its satellite-town Kebajoran, Bandung and vicinity) are by no means typical. For example, it is known that conditions in Bandung and in the rural areas in the Sunda-lands are superior to those in other parts of Java and the Archipelago.

In contrast with North India, Indonesia has to shelter its population against the cold only in the few very high mountain villages, but all houses must provide protection against the heat and the heavy tropical rain. These facts give a special character to the kind of housing required, its orientation and siting.

As there has been no refugee resettlement problem, as in India, Pakistan and Malaya, the housing shortage in Indonesia, in comparison with the other countries, is not so enormous and is more manageable; it may well be overcome in less time than in the other countries of South and South-East Asia.

2. Cause and Magnitude of the Housing Shortage

The housing shortage is acute not so much in rural areas as in and around the towns with populations of 25,000 and over, and especially in the big cities. The housing shortage in these cities and towns has several causes.

a. In the big cities building activities for the lower income classes before the war could not cope with the increase of population (in Java 1.8 per cent annually, in the larger towns up to 5 per cent).

b. During the war and the years immediately following, nearly all building activities were frozen.

c. For many people postwar life in agricultural areas and little towns was not safe, and consequently there was a considerable exodus to the bigger towns, which resulted in an abnormally large increase in their population. During that time housing conditions in the towns became very bad, as many houses were built illegally in the temporary absence of building control

Even today the building activities in the larger towns cannot keep pace with the natural increase of population, and housing conditions have continued to deteriorate.

Private enterprise in the field of housing, which, of course, is limited to houses with an economic return, is at present negligible in the towns, due to the excessively high prices of building materials and labour.

Moreover, building activities are in many cases hindered by the shortage of public land available for housing.

Before the war many of the larger municipalities owned adequate areas of land for urban development, zoned according to a town plan; but during and after the war no more land was bought, and the area which was to be built on was often already occupied by buildings illegally constructed of temporary material. Because of the housing shortage, the municipalities at present do not attempt to have these buildings demolished.

If it is assumed that the housing problem in rural areas does not require improvement in this first stage, and that in the towns and big cities every family should have its own house, the magnitude of the housing shortage at present can be estimated roughly to be about half a million houses.

3. Organization for Housing Programmes

A satisfactory housing policy can only be achieved if the responsibility for the housing and planning activities is clearly apportioned between the Central Government and the municipalities and other local authorities. As is the case for most of the other countries visited, Indonesia does not meet this requirement.

At the moment, neither the Central Government nor the municipalities are compelled to ensure an adequate provision of houses in proportion to the size of the population. The Mission feels that as soon as possible steps should be taken to remedy this situation. The government ministries and departments and the municipalities and other local bodies should know exactly which role they have to play as regards housing so that there can be satisfactory co-ordination. According to the Town planning Act, the municipalities are required to ensure that in the area covered by the town plan, sufficient land is assigned for each class of population according to present needs, but this does not mean that houses actually are provided.

At the same time, it should be noted that the municipalities have done more than they were compelled to do. For instance, many of them took important measures to ensure the availability of building plots, by buying agricultural land on the outskirts at a price little more than its agricultural value long before the development of such places was foreseen. Even with the addition of development costs, this resulted in making available building plots for various purposes at a very moderate price. It is regrettable that most of this "spare" land, as a consequence of the war and the uncertain period which followed, has been occupied illegally, and that as a result all town extension and development will have to take place on land adjacent to the existing built-on areas.

As a consequence, the price asked for the land involved is much higher than the agricultural price level. If the Government decides on compulsory acquisition according to the present legislation, it is likely that the necessary land will only be obtained after long delays. It is also likely that the price of such land, which is to be fixed by the judge, will be nearer to the value of developed land than to the agricultural value. An exorbitant profit would thus go to the landowner, which is considered unsocial.

In the last 30 years, many municipalities have been building houses for low income families. Starting in 1928 some towns (and occasionally limited liability companies in which the municipality as well as the Central Government was represented) built up to a few hundred houses per year for the very poor. Although building in such quantities failed to solve the problem of housing for the low income groups, it provided useful experience in the construction of various types of houses, their layout, their financing, the materials to be used, etc. The municipal housing undertaken at Bandung is a good example of gradual development, and it has demonstrated useful elements for a more definite solution of the housing problem.

In the period immediately following the war, before the municipalities were re-established, the Central Government assumed responsibility for the provision of housing. To cope with the most urgent needs, it started building in the demolished cities and in those where the overpopulation referred to above was most acute. In one case (Jakarta), it was considered useful to establish a satellite town (Kebajoran). At Bandung 500 houses for the low income groups were built. The Government, unfortunately, used non-permanent material, a system of building which 30 years ago had already proved uneconomic for governmental/municipal housing, due to the high costs of maintenance and the shorter term of amortization.

The quantity of houses built by the Central Government after the war has by no means been large enough to cope with the normal increase in demand. Some of the government services built houses for their own employees (railways, postal service, etc.).

The houses for government servants sometimes did not provide an economic return, as the rent was fixed at a certain percentage of the salaries. This was in fact a subsidy. These subsidies were small; in the present economic situation, however, the subsidy, in many cases, would be extremely high, and this should be avoided, unless it is granted as part of a concerted housing programme for the low income population as a whole.

The houses built by the municipalities did not require a subsidy; an economic rent was charged for them. In some cases, the capital was furnished by the Central Government.

In other cases, the municipal houses for low income groups were built in conjunction with larger houses. The rent of the municipal houses was then fixed below the economic figure, the loss being covered by the profit on the other houses. This was also, in fact, a kind of subsidy but without cost to the Government. There was no fixed policy on subsidies.

In most cities, the greater part of the houses were privately owned; the same was true for the land on which these houses were built, even in cases where the municipality had previously developed the land. In a few instances, however, the Government retained ownership of the land which was rented on a long-term lease.

At present, the Government is planning to change this practice so that only land for foreigners can be rented on a long lease. The old system with improvements in procedure and security will remain in effect for Indonesians.

No building activities may take place without the consent of the municipal building authorities, which can refuse inappropriate requests on grounds stipulated in the building regulations. If a town plan is in force, future building can be situated according to that plan and therefore, offers no problem, provided that there is adequate control on the part of the municipal authority. In rural areas at present, permission is needed only for building along the highways. Although this prevents the construction of too narrow highways, it does not prevent ribbon development. In rural areas more than 300 feet from the highways permission to build is not required.

Since the war, the Centrale Stichting Wederopbouw (Central Institute for Reconstruction) has been established under the jurisdiction of the Department of Public Works. Its function is to organize and facilitate the reconstruction of war demolished cities. The greater part of its activities has been confined to the eastern part of the Archipelago, but it has also carried out the construction of Kebajoran, the first satellite town for Jakarta, a development of 2,000 houses. The town is intended to accommodate 60,000 people.

In the opinion of the Mission, acceptance of the principle of satellite towns in connexion with the further growth of the urban population in a region, is very important. If this principle is applied in due time to the large cities, their urban boundaries can be limited so that their growth can be limited. . The present Government intends in the near future to put the activities of the Centrale Stichting Wederopbouw on a broader basis and to convert it into a Housing Department as a part of the Ministry of Public Works.

According to the town planning act there should be sufficient personnel for planning and building control. At present, however, the number of qualified architects and town planners in Indonesia is extremely small. After the war there was an obvious need to rebuild the war-devastated towns as quickly as possible on the basis of a reasonable new town plan. The services of the available planning experts were therefore pooled (Central Physical Planning Bureau of the Ministry of Public Works), and it proved possible to draw up 10 town plans (many in some detail) within three years. However, since most of these experts were Dutch, they have left Indonesia and there are very few planners left on the staff. The present Chief of the Bureau hopes to rectify this situation.

Before the war, the biggest towns had their own architectural and planning staff, but now most of the qualified architects and planners have left. If housing and town planning programmes, for which the municipalities are responsible under the present law, are to be executed in an effective and efficient manner, restaffing is an immediate necessity.

4. Legislation

The town planning act now in effect in Indonesia should be enforced in all the towns.

Some building regulations already conform to this act, but in some towns out-of-date regulations and by-laws are still in force. The Central Bureau for Physical Planning is now preparing a standard building by-law, according to the principles of the act, which with some modifications can be used in the different towns.

Many of the rural areas in Indonesia need planning legislation, the present legislation being out-of-date. An ad hoc committee is at present working on a planning bill for these areas. If the bill is made law, regional and national planning will then be possible.

For many years plague regulations have been in force, to be applied wherever a flare-up of this terrible disease is anticipated. These regulations, which forbid the use of certain building materials and forms of construction, have proved effective.

Indonesia also has passed an Act of Expropriation (compulsory acquisition) which permits the acquisition of land in the public interest. There is a special title in this law, which enables land to be compulsorily acquired for housing purposes. Enforcement of this stipulation would provide effective planning and housing, but the procedure is so long and difficult that almost no use has been made of this power up to the present. The few experts on housing and planning are trying to persuade the Government to bring this law up-to-date.

In order to prevent the charging of disproportionate prices for undeveloped land, there is need for legislation to fix these prices at or near the agricultural price level. The British Town and Country Planning Act, 1947, illustrates one way in which this can be done, i.e., by fixing the acquisition cost of land at its existing use value.

5. Rural Housing.

There are decided differences between urban and rural housing in Indonesia. The latter are built mostly of temporary local materials. Traditions of rural layout vary on the several islands but usually the houses are grouped together, and regularly sited in small or large villages. In Java, for example, the houses are usually placed in regular rows and according to the points of the compass so that only the eastern and western walls are exposed to direct sunlight. The doors and windows are usually in the north or south wall. This type of arrangement results in a rectangular grid of footpaths or roads.

This description refers in particular to rural areas at some distance from the towns; nearer to the towns the influence of the latter is obvious.

In the larger villages a village square (alun) forms the centre of the community. The house and office of the head of the village, as well as the other more important buildings are situated within this square. In Muslim villages the mosque is at the western side of the square; the orientation of this building with its back to Mecca forms an angle with the direction of the square and all other buildings. The market place and sometimes a theatre or place of recreation are situated at one side of the square or in its immediate vicinity.

In the villages the buildings are usually constructed of vegetable material. The walls are of bamboo matting or timber, fibres of the sago palm, or palm leaves, depending on the part of the archipelago in which the dwelling is located. The roof is covered with attap or burnt clay roof tiles; in some parts of the archipelago shingles of ironwood are used. Indjug, a fibre of the aren palm, is also used for roofing material.

Brick construction is sometimes used in the rural areas, usually for Chinese shops in the form of row houses or for industrial buildings such as sugar and textile factories, etc.

The price of locally available building materials in the villages is mostly in accordance with the agricultural economy. If in rural areas a house has to be built in vegetable material, the price of the house will be more or less within reach of the peasant. The necessary labour is generally provided according to a system of mutual-help (gotong-rojong, tulung-menulung) which still flourishes in rural areas but has died down in the towns where the habit of collective life has largely disappeared.

The houses provide adequate space (according to present customs), as well as sufficient ventilation through doors, windows, walls (e.g., bamboo-matting) and also through the floors when they are raised and built in timber or bamboo. The custom of raising the floors differs in the several islands.

In most cases, running water also is available, which makes possible washing and bathing and the disposal of soil and waste.

Water from springs or wells is used for drinking purposes, as well as for bathing and washing. Latrines are usually built above ponds or little streams; the bore-hole type latrine also is sometimes used. If the density of population is not too high, sanitary conditions are usually not so bad; however, in the more congested large villages and little towns, hygienic conditions require improvement.

The number of rooms, their situation, and the number of people making use of them vary throughout the islands. There are many different examples of typical traditional houses.

Certain special kinds of rural housing should be mentioned. Generally, all the plantations provide housing for their permanent workers. The conditions of these houses are mostly above the usual rural standard. In many cases, there is a reliable water supply with common baths and latrines, e.g., the village of the Sukawana Plantation, which was visited by two members of the Mission. Some factories have followed the example of the plantations, in the provision of housing for all or some of their workers.

It is clear that conditions in many villages could be improved through application of the aided self-help principle.

This system has been used in the areas where the plague regulations were applied+. The population in these areas was required to remove all parts of bamboo construction as well as the attap roofs from their houses; the Government in return provided them with timber and roof-tiles of good quality at very low prices; the assistance given amounted, in fact, to a subsidy. The inhabitants of the villages are usually able to build their own houses without technical guidance. As was mentioned before, the problem of rural housing is not so urgent in Indonesia as for example in India, and although some improvements are necessary in the villages, the housing problem in the towns is much more serious.

6. Urban Housing.

Urban housing is at present a real problem, due to overcrowding, the bad condition of many of the low cost houses and unsatisfactory sanitary conditions.++

While in the big cities the living conditions of the high income groups are mainly very satisfactory, the conditions in the shopping centres and in the sections of the low income groups, are at present often very unsatisfactory. In so far as these conditions result from overcrowding, the only remedy is to build more houses.

Originally, the houses of the lower income groups in the towns were of the same type as in rural areas, but the increase of land values resulted in the use of smaller plots and consequently a much higher population density. As a results, many cities have enacted building regulations prohibiting the use of attap roofs, for example, and stipulating the use of fire resistant and vermin-proof building materials.

Usually, there is a distinct separation in urban areas between the houses for well-to-do-people, the shopping centre near the town square (originating in the village-square), the greater part of the Chinese shops near the market place and station, and the areas for the poor population.

+ See para. 4 of this Chapter.

++ See para. 2 of this Chapter.

Shops or better houses occasionally have poorer quarters at the rear.

The older sections of many of the principal cities in Indonesia show the results of poor planning, and are badly in need of improvement. However, modern community planning principles are being applied in the preparation of postwar development plans.

The larger houses, the shops and offices are built in brick or concrete; before the war, the small houses began to be constructed of brick rather than bamboo and timber, as the difference in building costs was not high and the economic value of the permanent houses much higher (lower maintenance costs and less upkeep). Overcrowding in the small houses was caused by the fact that building costs for minimum houses in towns and cities were much higher than in the villages. As wages in the towns were only a little higher than those in the villages, the minimum houses in the towns and cities could not have an economic return.

This led to the subletting of parts of houses or single rooms, thus creating a population density per house which from a social, ethical and hygienic point of view is most unsatisfactory.

A reduction in the rent value would have been possible by building minimum row-houses, but since most Indonesians prefer detached houses surrounded by gardens, this solution could not be used.

Most of the towns have no subterranean sewerage system in the areas occupied by the very poor. Nightsoil is usually disposed of in open effluents or rivulets or canals and contaminates the water which is used for washing, bathing, the cleaning of teeth and sometimes even for drinking purposes.

Often in such areas drinking water is obtained from wells, which because of fissures in the soil during the dry season are liable to contamination by the water of the rivulets.

In order to prevent the use of contaminated water, the Ministry of Health has been conducting a campaign to encourage the drinking of tea rather than water, in order to ensure that all drinking water is boiled before using.

The condition of some of the older small houses, which were originally built of non-permanent material and have been frequently repaired has deteriorated considerably, but is not considered bad enough for compulsory demolishing, which is allowed only when there is danger of collapse; the sections where these dwellings predominate are real slums. There is neither a sewerage system nor other adequate system of nightsoil disposal to service these houses and the approach to the houses is sometimes only a muddy footpath.

Many of the larger municipalities have initiated limited slum clearance programmes, both before and after the war. In some cases, these programmes were undertaken as part of a redevelopment plan for the entire city. The activities in Bandung, for instance, consisted of:

a. Construction of a drainage and severage system.
b. Construction of metalled footpaths and roads giving an approach to all houses.
c. Water supply to all houses.
d. Latrine-bathroom with connexion to the main sewer for all houses.
e. Street lighting on roads and paths.
f. Establishment of daily garbage collection from every house.

These activities were financed partly by the Central Government and partly by the municipality concerned; occasionally house-owners or landowners also contributed to the costs. The Bandung slum clearance programme was started in 1927, and before the war, the greater part of the slum area had been improved. During the war and the months following the Japanese surrender, much of the work was demolished, but repairs have since been made and new areas are in course of improvement.

Although this municipal programme did not include the improvement of houses as such, many houses were greatly improved because the new facilities provided by the municipality seemed to encourage houseowners to make improvements in their homes, or to tear down the old structures and build new ones. It should be mentioned that although the slums were effectively

cleared, the inhabitants originally living there did not profit by it, as they could not afford the higher rent charged for the improved or newly built houses. It was therefore necessary for them to move to the outskirts of the city where housing accommodation was cheaper, or to move in with another family in order to meet the higher rents. This unexpected result may be of interest to other countries.

The system of a combined latrine-bathroom unit which was introduced has proved to be very effective and, as the principle may be applicable in other countries, a short description is given in Appendix H.

It should be added that before the introduction of a system supplying each house with water, for many years water was provided free in the slum areas at standpipes and at communal bathrooms and latrines. However, this free system, which is still in effect in many cities, did not prove to be fully satisfactory.

Before the war, although the town planning act which was drawn up at that time had not yet gone into effect, several municipalities were carrying on limited town planning activities based on the principles embodied in the act and the larger cities were equipped with some staff for town planning and building purposes. The smaller municipalities, which could not afford an expert of their own, consulted a private town planner. At the present time, the shortage of town planning experts has considerably limited activity in this field.

Djakarta, the capital, utilized the services of a private town planner. If the town planning act is to be fully effective, however, an adequate staff of specialists on short-term contracts is necessary. The larger municipalities should have their own planning staffs, while the smaller towns should be able to obtain help from the Central Government.

Housing conditions just beyond the municipal boundaries are unsatisfactory; the building regulations are usually out of date, and in consequence a crowded, unhygienic and combustible jumble of housing has developed, mostly along the trunk roads. In some cases the municipal boundaries have been extended in an effort to place the areas under control, but without adequate planning this can only mean shifting the evil elsewhere. The worst slums in many cities were formed because of lack of adequate legislation and control.

Although it is strongly recommended that all house building by the central or local governments should be in permanent materials, this does not mean that temporary material should not be used by people building their own house, whether in rural or urban areas. A house is used by its owner with much more care than by a renter, so that costs of upkeep are much lower.

Thus, self-help methods for building a house could be carried on with the assistance of the Government in the provision of the necessary materials, permanent as well as temporary, at the lowest possible prices. It is recommended that this system of aided self-help for urban, as well as rural areas, be applied in Indonesia.

7. Housing Standards

Many of the building regulations issued after the war contain standards based on floor area and capacity per person rather than per family, which was the usual procedure in most of the countries visited by the Mission. For example, rooms may have no smaller dimensions than:

		Area	Height
(a)	in the better dwellings (service rooms not included)	129 sq. ft.	11 ft.
(b)	in middle class dwellings	97 sq. ft.	10 ft.
(c)	in smaller dwellings	80 sq. ft.	9 ft.
(d)	in minimum dwellings	65 sq. ft.	9 ft.

Under certain conditions, the height may be decreased to 8'4".

Rooms, according to their use, must be equipped with adequate and efficiently located light and ventilation openings, together not less in area than 8 per cent of the floor area in detached buildings, and 12-1/2 per cent when in blocks (terrace building).

Of this area, one half must be used for light, one half must be capable of being opened and 1/20 must be permanently open.

Bedrooms in minimum houses must have a floor area per person of at least 32 sq. ft. and must contain at least 280 cu. ft. of air space.

In other housing types, 48 sq. ft. of floor area and 420 cu. ft. of air space must be available for one individual, and 32 sq. ft. of floor space and 280 cu. ft. of air space for each additional occupant. Children of less than 5 years are not counted, while a child between 5 and 12 years is counted as half a person. These figures are usually doubled for hospitals, etc.

Except for the kitchen, bathroom, latrine and storage space, no house for the lower income groups may have a floor area of less than 104 sq. ft. For the slightly better types, 162 sq. ft. or 195 sq. ft. is required.

According to these regulations, these houses may be occupied by three, five and six persons if all of the floor space is used for bedrooms.

In August 1950, a housing congress held at Bandung issued a resolution that a minimum dwelling should contain at least one living-room, one dining room, two bedrooms, one storage room, one kitchen, one bathroom and one latrine, with a total built-on area of 550 sq. ft.

Although it is believed that such standards may be a desirable social requirement, the present economic condition of the country precludes their adoption at this time.

If the standards of the Congress were applied, it is feared that only a small number of houses could be built, for the financial position of a country determines the extent of housing investment. For the same amount of money many more smaller houses could be built and more people could be helped.

Large houses, unless heavily subsidized, are likely to be subdivided and sublet so that living standards will actually be no better than if smaller houses were built.

For single people, or a couple without children, a minimum of one room, bathroom and latrine (which may be combined) must be considered acceptable at present. If such houses are to be built, it would be wise to provide for the possible addition of one or two rooms so that the dwelling can eventually be adapted to future higher standards.

According to the modern building by-laws, every house has to be provided with a water supply and adequate night soil disposal. The building by-laws also include regulations controlling housing density. This is achieved by prescribing a minimum area and width of building plots for each building type. These sizes differ in the several towns according to local customs or conditions, and to the location of the dwelling within the urban area. In the city centre the plots are usually the smallest, gradually increasing in size towards the outskirts of the town. For instance, at Bandung, for the smallest type of detached building in the centre of the town, the minimum areasof the plots are 120 sq. yds., in the suburbs 150 sq. yds, and in the agricultural area, 600 sq. yds. The minimum widths of these plots are respectively 25 ft., 31 ft, and 67 ft.

If row houses are built, mostly for the Chinese inhabitants, the minimum area of the plots is 48 sq. yds. with a minimum width of 10 ft. The minimum houses are usually sited off footpaths with a total width of 10 ft., of which 4 ft. is metalled.

These minimum houses can be grouped together in a small neighbourhood unit or community with sufficient common open space where the children can play. The new layouts at present are provided with a community centre (school, shops, etc.).

The houses of the middle income group require a larger minimum area; they are usually situated along a lane 20 ft. in overall width accessible to one-way traffic.

In the rural areas no standards have yet been applied.

8. Research and Native Resources

The type of building material used varies throughout the Archipelago; as indicated above, in the rural areas mostly vegetable building materials are used. In some areas bamboo is used for structural supports as well as for the walls and the floors.*

Before and at the beginning of the war, general research was started on the improvement of the use of bamboo (selection, construction and preservation); this research was interrupted, however, by the internment of the technicians working on the project.

In other parts of the Archipelago timber is easily available and is, in most cases, used for the construction of floors and walls and as shingles for roofing. The Forestry Research Service has valuable information on the properties of all kinds of timber.

In the eastern part of Indonesia palm leaves (nipah) are used for roofing and wall material; and sometimes the ribs of the leaves of the sage palm also are used for wall material.

In the towns a number of the houses are built in brick or concrete with tile roofing (sometimes wooden shingles); the floors usually consist of cement tiles.

In many areas brick and roof tiles are locally made, usually moulded by hand, but near Djakarta and Bandung a certain amount of mechanically moulded materials are produced. These factories also sell vitrified burned pipes and accessories for sewerage systems.

The Governmental Research Laboratory for ceramics (Bandung) gives assistance to all factories in this field.

There is only one cement factory in Indonesia (near Padang). The output of this factory cannot meet the needs of the country, so that cement has to be

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* Data regarding the use of bamboo shingles for roofing has been collected by Fr. H. Maclaine Pont at Trawulan.

imported, which at present is difficult because of currency problems. The establishment of one or two more cement factories is considered urgent.

In competition with the burned brick manufacturing, some agencies near Bandung have started manufacturing bricks made from volcanic ash, which seems to have hydraulic properties. This material also is used for walls cast in situ; its use in roofs reinforced with bamboo is still in an experimental stage, stage. In the better buildings before the war, usually teak or merbau timber were used; both show almost no deformation and both are practically vermin-proof. Although the Forestry Service did some research into seasoning and preservation of other available timbers, this did not lead to the application of these methods on a large scale, since the available quantities of teak and merbau were sufficient to meet the needs of the country.

This satisfactory position was spoiled during the war, as the Japanese removed great quantities of teak from the plantations of the Forestry Service for military purposes. The present available quantity of first class timber is therefore very limited, and as this position can only be improved over a long period, it is suggested that further research into seasoning, preservation and application of second-class timbers on a large scale should be seriously considered.

Before the war a large number of dwellings for the lower income groups were built in so called ampasite (bagasse containing treated fibres of the sugar cane) made into standardized building slabs. This system* proved to be cheap and very satisfactory; however, when the sugar factories started using the pressed out fibres of the sugar cane as a fuel, the manufacture of ampasite was stopped. The inventor who developed this material now intends to improve his construction method by using some other kind of fibre as a binder for foam concrete.

In the field of standardization, some valuable recommendations have been issued by the Normalisatie Raad (Standardization Board), concerning among other things the correct standard sizes of bricks, tiles and timbers.

*Jac. P. Thijsse, "Low Cost Housing in Tropical Areas", Housing and Town and Country Planning, United Nations, Bulletin No. 3, October 1950: pp. 31-37.

Since the war experiments in soil stabilization have been started at the Laboratory of Soil Mechanics of the Public Works Dept. Several stabilizers are being used and some tests have shown very fine results. Up to now the possibilities opened by this research have not yet received practical application.

At the Laboratory of Technical Hygiene some interesting research was done on climatologic conditions, water and sewage purification, and contamination of the soil in connexion with different systems of sewage disposal.

There is also a Laboratory for Testing Materials which has proved of great value in the application of new materials and the improvement of traditional materials.

Nearly all of the laboratories mentioned above are situated in the same town, most of them in the immediate vicinity of the Technical Faculty of the University of Indonesia at Bandung. The Mission is therefore of the opinion that there is an excellent opportunity to co-ordinate their work in the field of housing research. This could be done if the responsibility for co-ordination were vested in one person, who could also be responsible for international exchange of results and experiences.

In the field of social research much has been done in some of the municipalities, e.g., by the Health Department, the Bureau of Statistics, etc. as well as by individual civil servants. It would be useful to collect the scattered publications in this field and summarize the work which has been done.

The Ministry of Social Affairs, which was established after the war has also been active in the field of social research. It would be very useful if its work in so far as it is related to the problems of housing, could be co-ordinated with the technological research into housing described earlier.

9. Training Needs

Most of the building activities and the building control in Indonesia are at present in the hands of non-qualified architects, some civil engineers and laymen. It is therefore essential to increase the number of experts in this

field. As a start, the Technical Faculty of the Universith of Indonesia has initiated a complete five year course in architecture, with the possibility of including town planning after the third year. However, special measures also are necessary to bring about immediate improvement of conditions and overcome the lack of personnel employed on a short term basis. The following possibilities are suggested for housing and building control and for town and regional planning:

(a) Improving the technical education of building surveyors;

(b) Making it possible to get a bachelor degree after three years of the architectural course in the Technical Faculty, provided that the graduates are especially trained in housing matters and building control, as well as in town planning principles;

(c) Introducing refresher courses in architecture, building control, sanitary engineering and town planning for personnel at present charged with a job in this field but not properly qualified for it;

(d) Inviting experts from abroad for teaching where necessary;

(e) Sending students abroad. This would certainly broaden their view, but if the architectural course at the Technical Faculty of the University of Indonesia were well equipped, this would not be necessary.

Extension of vocational training also is necessary, as there is a shortage of trained personnel in all the large cities.

Because of the need to extend education in the housing field, the facilities of the university, as well as of the secondary and lower technical schools and the vocational schools, should be considerably expanded, both as regards their size and their teaching staff.

10. Some Recent Proposals

It was evident even before the war that in the towns housing conditions for the lower income groups were getting worse every year. Shortly before the war, therefore, a Committee was appointed to study the housing problem and to make suggestions to the Government. The activity of this committee was interrupted by the war.

That the problem of housing the lower income classes is clearly in the public view was proved at a Congress on Housing, held at Bandung in August 1950, as a result of which the Government was requested to do the following:

(a) Study the possibility of establishing factories for standardized building parts in every province;

(b) Establish as soon as possible an institution (Stichting) for housing, which would have the duty of providing funds for rehabilitation to be included in the yearly governmental budget; and

(c) Establish a Housing Committee.

At the same time, standards for minimum housing were accepted by the Congress,* and the suggestion was made that in every autonomous area the building regulations should be brought up-to-date and land should be reserved for the development of every town and village.

The Government has not yet replied to these requests, but it is known that the Ministry of Public Health is studying these recommendations.

At the same Congress, the idea was put forward that the problem of the housing shortage could be partly solved by having the governmental agencies build adequate housing for their employees. The Mission believes this would result in a disproportionate drain on governmental resources, unless at the same time subsidized housing for non-governmental, low income employees and workers were included in the programme.

The Congress also discussed the possibility of making it obligatory for the employers in big industries, plantations, etc., to provide housing for their labour. Although it is believed that implementation of such a measure would be possible, to some extent, a careful study should first be made to make sure, for instance, which concerns would be financially strong enough to bear such a burden.

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* See paragraph 7 of this Chapter.

11. Rent Assistance

In the war-demolished towns, ruined, private houses with a floor-area not exceeding 100 sq. yds. were reconstructed in part by the Centrale Stichting Wederopbouw.**

Building costs were advanced by the Government, in the form of a long-term loan. As building costs were at that time so high that an economic return was not possible, the Government paid a yearly rent subsidy to the owners up to an amount equal to the difference between the actual and the economic rent.

These measures which were similar to those introduced in the Netherlands proved to be such a heavy burden on the budget, that after some time they were no longer applied.

The Ministry of Public Works is now considering other methods of financial assistance.

** See paragraph 3 of this Chapter.

12. Economic Considerations

As a consequence of the decline in money value which has taken place since the war, urban housing has been affected in the following ways:

1. House rents were fixed after the war and are now 30 per cent higher than prewar rents. The price of building materials necessary for upkeep of the houses rose from 6 to 12 times the prewar level. This led to bad maintenance or no maintenance at all, and it is feared that the original capital investment will therefore be largely wasted.

2. Lower incomes have been increased by 500 to 1,200 per cent to keep up with the minimum cost of living. The wages and salaries of the middle and upper income groups for the most part have undergone a much smaller increase. Consequently the families concerned have to live much more cheaply; they cannot afford to have many servants and they must renouce all luxuries. Many of them have moved from expensive dwellings to more moderate ones, or have sublet parts of their big mansions. As there is no longer a demand for such large homes, the housing shortage exists only in moderately priced and very small houses, most of which do not produce an economic return under present conditions. The most effective way to tackle the problem seems to be for Government to undertake large scale constructional low cost housing.

If this type of housing could provide an economic return, it could be sold over a term of 10 years on a system of hire-purchase which, is not new in Indonesia. For these houses the promoter (Government) would never have to invest more than 55 per cent of the yearly building costs, with which amount building can go on for an unlimited period.

In the case of houses with an uneconomic return, the Government would have to pay a subsidy which would increase proportionally with the number of houses, which of course remain the property of the Government. This may become a heavy burden on the budget; however, the lower income groups would be adequately housed, in acceptable conditions in healthy, modern, self-contained neighbourhoods, where young people could be developed into valuable and healthy citizens, who would help to increase the prosperity of the country in the future.

As a matter of course, if the Government wishes to solve the housing problem as quickly as possible, the costs of subsidy and of capital investment should be kept as low as possible. Therefore it is necessary at this stage to make the standards of housing no higher than is necessary to ensure good moral, social and hygienic conditions. Standards in housing under present conditions have to be a compromise between the social standard desired and the economic investment possible.

Although the financial consequences of tackling the housing shortage in Indonesia may prove to be a heavy burden on the annual budget, it should be kept in mind that, compared with the other countries visited by the Mission, conditions in Indonesia are relatively the best.

The question may arise as to which building system is most appropriate to overcome the housing shortage.

Building in a traditional way on a large scale may prove difficult because of the limited materials and skilled labour available. A study should therefore be made of other building systems which may not prevent these difficulties. It may be that prefabrication or building in special

materials could solve the problem. The Government, however, should refrain from importing materials from abroad except in small essential quantities.

Measures also should be taken to ensure economic stability, for example by timing the operations in such a way that, when the programme has been executed, no large group of skilled labour will suddenly be left without employment and thereby be deprived of its earnings.

13. General Conclusions

Shortly before their departure, the two members of the Mission who visited Indonesia addressed an informal memorandum to the authorities concerned outlining the following points.

Since the Government has not yet established a comprehensive national policy and programme for housing, which in the opinion of the Mission is urgently needed, it was suggested that a team of technological and administrative experts, working in co-operation with government authorities, should make an intensive study to determine the requirements for a fully developed housing policy and programme. This team might consist of three specialists, including a sociologist, an economist and an engineer, and might suitably be attached to one of the Government departments, for example, the Ministry of Social Affairs. It would work full time for as long a period as would be necessary to complete the study.

The memorandum also suggested that the team should be qualified to recommend useful ways in which the several arrangements for international co-operation could be used to advantage by the Government to assist it in forming and executing housing programmes. This could also apply to

international facilities for sending Indonesians abroad; the provision of documented information; the co-ordination in research and administration; the securing of foreign experts if and when desired; and perhaps most important of all, to the fullest use of international financial assistance for housing in various forms.

The first step necessary, it was suggested, would be to make a systematic study of housing, its shortcomings, and possible remedies; all experience in the housing field available at the present time should be collected and studied thoroughly, as a basis for future action.

In addition to the foregoing principal recommendations the other suggestions outlined in this chapter may be summarized as follows:

1. Complete housing and planning legislation should be put in force as soon as possible (Planning legislation, including rural as well as urban areas, building by-laws, etc.)
2. The expropriation law should be brought up to date.
3. The adequate staffing of governmental agencies with town-planners, engineers, surveyors, etc., should be aimed at (see No. 9).
4. More cement factories should be established.
5. There should be research into seasoning of second-class timber, and bamboo research.
6. The work of the available laboratories concerned with various aspects of housing research should be co-ordinated.
7. There should be a programme of social research for housing, co-ordinated with technological housing research.

8. .. system of exchanging results of research and experiences with other countries should be developed.

9. Extensive improvement in education for housing and planning, from vocational training up to university level is urgently needed.

CHAPTER VIII

THE PHILIPPINES

1. Impact of the War

Like some other countries which were heavily damaged during the last World War, the Philippines is faced with housing problems that are more difficult and much graver than her planning problems. The widespread destruction made the housing shortage more acute, but it made planning and replanning a little easier, in some cases, because large slum areas were frequently completely demolished. In such cases, there was more freedom for planning.

About 80 per cent of Manila's buildings were either destroyed or damaged, and more than half of these were homes. The homeless doubled up with the more fortunate. Some welcomed friends; others charged excessive rents. In addition, reconstruction of homes was slow, because building materials were costly and difficult to obtain. Furthermore, some profit-making enterprises such as theatres, night clubs, stores, etc. bought the available lumber and hardware at any price. Many good artisans were lost during the war; and the labourers who were left behind, although inexperienced, were greatly in demand.

The farmers in the provinces could not work in their fields, because their seedlings had been eaten up; and their work animals slaughtered or taken away during the war. People from the war-damaged rural areas converged on the cities in search of food and employment. Some found work along the road - in or near military camps; others reached the cities only to find that the machinery of production was gone. They remained, nevertheless, and some eked out a living by buying and selling. Many people fled to the cities to escape the disturbances in the hinterland. Refugees set their shacks up on any available vacant land: in public parks and private lots, in ruins of buildings and even in the streets. Overnight, large settlements sprang up like mushrooms - flimsy structures of tin and boards put together to form what passed for homes.

In spite of the fact that Manila lost a considerable number of her residents, her population swelled tremendously from about 800,000 before the war to well over 1,200,000 after liberation. There are now about two million

people in the Manila Metropolitan Area, more than three quarters of which are crowded in about one tenth of the area.

Other urban areas experienced similar changes. The number of Philippine cities with a population exceeding 100,000 people rose from three in 1939 to eight in 1948. Those with about 25,000 people increased from four to eleven during the same period.

This shift of population to the cities worsened the urban housing problems which were already unsatisfactory even before the war. Thousands of squatters settled on both private and public land; money flowed freely, due to the presence of the army, but neither materials nor labour were sufficiently available to meet the building demand. In the meantime, although little construction was being done, plans for future developments were prepared, so that when and if materials and labour should become available, housing construction could be undertaken without delay. The machinery for planning was set up during this period.

2. History

Planning - community planning - is not new in the Philippines. There was some sort of planning, even if crude, among the Filipinos long before Magellan discovered the Islands in 1521. Historians made mention of villages - of Filipinos who grouped themselves for mutual protection, or in search of food. Usually these villages, called barangays, were located near streams or the sea, for the original inhabitants of the Islands - pre-Spanish Filipinos - were predominantly fishermen. The houses of these people were arranged according to a certain pattern around the Rajah's "palace", which was essentially like the other huts, except that it was more substantial in size and quality and was furnished with some degree of luxury. The palace, which was the centre, was located near an open space where the Rajah met his nobles to discuss the affairs of the barangay and where the tribal ceremonies and rituals were held. Around the open space and within calling distance of the palace were located the houses of the nobles. Farther away, but also in the immediate vicinity were the homes of the freemen; these formed the greater bulk of the dwellings in the

barangay. The Rajah, the nobles, and some of the freemen had servants or serfs, and these people lived either in the houses of their masters or in small huts constructed nearby. There were no well-defined streets; there were foot paths, however, which were used by both men and work animals.

The Spaniards brought Christianity to the Philippines. It was natural, therefore, that the towns which were developed during the Spanish regime emphasized religious institutions. The centre of activities was the church. The pattern of the towns followed, more or less, the pattern of pueblos in medieval Spain: a gridiron street pattern with the most important street, called Calle Real, leading ultimately to the church and the large public square, called the plaza. It was at this plaza that most of the outdoor religious ceremonies and celebrations were held. Some of the streets were paved - especially those where the religious processions passed. The palatial homes of the rich and the influential were located along these paved streets.

The importance of the state eventually began to manifest itself in the pattern of the town. The municipal building, or Municipio, where the administrative functions of the state were carried on, began to rival the church in importance. The Municipio was constructed in a grand fashion on one side of the plaza. Here were held official ceremonies and the town celebrations.

The growth of Filipino nationalism was reflected in the adornment of the plaza with the statues and monuments of heroes and patriots.

The coming of the Americans at the end of the nineteenth century marked the introduction in the Islands of education, commerce and industry. The public school came to be regarded as the nucleus of the community. Civic meetings and social activities were held in the assembly halls of the school which, in many cases, was located prominently near the plaza. A playground was developed as part of the school to provide for the recreational needs of children. At this time the important street started to be lined with stores. Land values rose.

In 1904, the famous American architect Burnham was brought to the Philippines to plan the development of Manila and Baguio. He prepared inspired plans for these cities based on conditions existing at that time, but unfortunately the plans were only lately brought into line with changing technological developments.

Before the Second World War, the government also prepared plans for Cebu, Iloilo, and a few other cities and towns of the Islands. This job fell to the Town Planning Section of the Division of Architecture of the Bureau of Public Works.

Immediately after the liberation, a separate agency was organized to replan damaged communities. The personnel of the prewar National Parks Office (under the Office of the President) formed the beginning of a staff which was later augmented by personnel on loan from various government agencies and from the United States Armed Forces. The work of the Office developed from park planning, to land planning, and finally to urban planning.

On 11 March 1946, the President issued an Executive Order creating the National Urban Planning Commission "to prepare general plans, zoning ordinances, and subdivision regulations, to guide and accomplish a coordinated, adjusted, and harmonious reconstruction and future development of urban areas which will, in accordance with present and future needs, best promote health, safety, morals, order, convenience, prosperity, and general welfare, as well as efficiency and economy in the process of development; including among other things, adequate provisions for traffic, the promotion of safety from fire and other dangers, adequate provisions for light and air, the promotion of healthful and convenient distribution of populations; the promotion of good civic design and arrangement, of economic, wise, efficient and equitable expenditure of public funds, and of adequate provision of public utilities and other public requirements".

3. Organization for Planning

Subsequently, on 11 November 1950, the President created the National Planning Commission, merging three previously separate government agencies: the National Urban Planning Commission, the Capital City Planning Commission,

and the Real Property Board.

The Capital City Planning Commission was originally created by Congress for the special purpose of preparing a master plan for the capital city of the Philippines, including the necessary zoning and subdivision regulations to implement the plan. The Real Property Board was created by administrative order for the purpose of attending to the various problems involving private real estate arising from the formulation and execution of the planning of the city of Manila. The consolidation of the powers, duties, and functions of the three bodies was done partly for purposes of economy and partly to increase efficiency.

National Planning Commission. Besides the functions of the three bodies referred to above, the National Planning Commission has, in addition, the authority to prepare general regional plans for the purpose of integrating and coordinating the various urban plans, as well as proposals for projects of national or regional character, and to submit recommendations for the conservation and development of the natural resources of the country. The Commission also is charged with the drafting of regulations for the construction, repair, and alteration of buildings.

The Commission is composed of a Chairman and six members appointed by the President. It has a Technical Staff of planners, architects, engineers, draftsmen, etc., headed by a Director of Planning.

Planning Procedure. The National Planning Commission has adopted the following procedure in drawing up the plans for a town. A certain town passes a resolution requesting the National Planning Commission to prepare its plan. It appropriates some money (perhaps one half contributed voluntarily by the local civic club and later matched by the municipal council) to help defray the expenses involved in gathering the planning data and preparing the preliminary plan.

The Director of Planning then requests the local District Engineer, through the Director of Public Works, to gather the necessary information. The Director of Planning, or his representative, visits the site and confers

with the District Engineer, town officials, and members of the civic club about their problems and finds out their particular preferences and dislikes.

The Bureau of Lands may be asked to furnish cadastral information, and the Weather Bureau, flood data, etc. The planning staff usually prepares the base maps required, and furnishes the District Engineer with copies so that he may have the map checked on the field and the requested data indicated on it.

The data maps are prepared by the staff and a preliminary plan is drafted. At this stage of the work, different agencies concerned are consulted: the Manila Railroad for railroad proposals, the Bureau of Public Works for road and bridge proposals, etc.

After clearing the plans with public officials, a public meeting (or several public meetings) is held locally. The data maps and the preliminary plan (or plans) are shown and discussed. Suggestions and criticisms are solicited from the public. Based on the constructive suggestions received, improvements on the preliminary plan are incorporated.

When finished, this plan with its accompanying report is submitted to the Planning Commission. Once adopted, it becomes the official general plan.

Copies of the general plan are then furnished to the town and agencies that are concerned. Modifications to the general plan desired by the Municipal Council are submitted to the Planning Commission for approval. In case of disapproval, the Commission communicates its reasons to the Council which may overrule such disapproval only by a 3/4 vote, and proceed with the modifications. Failure of the Commission to act on requests for modifications within 30 days is deemed approval.

Subsequent to the completion of the general plan, the Commission may adopt zoning and subdivision regulations to effect the proper execution of the plan. These regulations are submitted to the Municipal Council for approval. Unless the Council disapproves or modifies such regulations by a 3/4 vote

within 30 days, they become official. Disapproval or modifications are filed with the Chairman of the Commission with a written statement giving the reasons for the Council's action.

The procedure just described provides for democratic planning with and for the people which starts with local initiative and thrives through local participation. It is practical planning based on facts; the 3/4 vote provision minimizes petty politics.

Comprehensive Regional Planning. The fact that the Commission plans for regions indicates that the planning is comprehensive. The Presidential Order which created the National Planning Commission does not explicitly mention any provision regarding the planning of rural areas and their integration with urban development, although the interpretation of the "conservation and development of natural resources" may easily be extended to include rural areas. There is no valid reason for restricting planning only to the small area within the legal boundaries of a city and for leaving out the suburbs which are parts of the urban area by social and economic implications.

4. Public Relations.

In view of the organization and procedure just described, it would seem that planning as an established function of the Government would be progressing smoothly in the Philippines.

Nevertheless, the present status of planning in the Islands leaves much to be desired and it will take some time to demonstrate its worth. In the meantime, its restrictive characteristics are being felt.

The relatively small success of the planning which has been accomplished to date may be ascribed to the fact that, while in the beginning the public reaction to planning was one of indifference, at present it is characterized by opposition; the latter is especially the case for the groups with vested interests who see in planning a serious threat to their age old practices of land exploitation. It is not uncommon, therefore, to find that at public hearings for planning proposals, most of the people present are those who object to the proposals; those who would benefit seldom attend these hearings and if they do, they do not speak for the proposals.

This change in the attitude of the public towards modern planning is considered a healthy sign, because objections come out in the open where they may be studied more fully and remedied, if need be. It is generally agreed that democratic planning should not only be for the people, but also with them. In other words, public participation is needed. It has to be admitted, however, that unless the public is well informed its participation will be more of a liability than an asset to planning.

To offset this possibility, there is need for effective public information and public relations. The public should be continually informed not only about what is proposed to be done but also how it has to be done, and more important still, why it has to be done. It is not surprising therefore to see newspaper articles and releases aimed at popularizing planning; or to hear radio programmes featuring skits or dramatizations of existing urban conditions and proposals for their improvement; or to listen to lectures on planning at schools, churches, or civic gatherings.

5. Housing Agencies

Thus far, emphasis has been laid mostly on planning and on explaining the policies underlying its procedures. An attempt also has been made to picture the plight of the masses, as they are now huddled in congested urban areas - an unfortunate condition brought by sudden industrialization and by the horrors of war and its aftermath.

If it is assumed that a family should not pay more than one quarter of its income for decent housing then about three quarters of Manila's families are at present unable to pay for adequate housing.

Organized housing for the masses has not been undertaken extensively in the Philippines, except by the Government and, recently, by a few insurance and real estate companies. There is practically no subsidized housing and the government housing activities are mostly confined to the work undertaken by the People's Homesite and Housing Corporation, the National Land Settlement Administration, the Rural Progress Administration and, to a lesser extent, the Bureau of Labour. At the present writing there is an active interest to consolidate into a single housing entity all those agencies having something to do, one way or another, with the problem of low cost housing.

People's Homesite and Housing Corporation. The People's Homesite and Housing Corporation is a composite housing agency - a semi-government corporation created by the merger in 1947 of the National Housing Commission and the People's Homesite Corporation.

The National Housing Commission was a non-stock corporation created in 1941. Due to the war, it was not actually organized until 1947 when it was provided with a capital of 5 million pesos (approximately $2.5 million US or £ 893,000) by Congress. The functions of the Commission were rather broad, for it was created for the "object of providing decent housing for those who may be found unable otherwise to provide themselves therewith; promotion of the physical, social and economic betterment of cities by eliminating therefrom slums and dwelling places which are unhygienic or

insanitary, and by providing homes at low cost to replace those which may be eliminated; provision of community and institutional housing for destitute individuals and for paupers."

The People's Homesite Corporation, which forms the other part of People's Homesite and Housing Corporation was formed to stimulate home building, establish model residential communities, organize co-operatives, and aid those of moderate means to acquire and own a lot and home. The Corporation owned approximately 4,000 acres of land in Quezon City, the capital of the Philippines.

Before the war, the People's Homesite Corporation developed a portion of its property into a small housing project. The houses were constructed of adobe, stones, timber and galvanized iron sheets, and were intended for sale to low income, white collar workers with a first payment of one tenth of the value of the land, building, and improvements, with the balance payable monthly for a period of 10 years. It was stipulated that the occupants could not sell the house to anyone except to the Corporation, in order to ensure that the buildings did not come into the hands of undesirable persons. When the war came, there was much confusion and property exchanged hands very fast; following Liberation it was found that most of the houses were owned by wealthy absentee landlords.

The merging of the two agencies into one housing body meant the unification of housing programmes so essential to effective administration. The combined assets of the Corporation as of June 1950 amounted to almost 8 million pesos ($ 4 million U.S. or £ 1.43 million), all of which was tied up with current projects. The Corporation's ownership of a large tract of public land in Quezon offers a worthwhile opportunity to relieve some of the awful congestion which now exists in Manila. Some of this land has already been subdivided into lots and sold to the public. It is interesting to note here that the resulting lots are not of the same size. The bigger lots are sold with some profit in order that the smaller ones may be sold to poorer people at a lower price, without sustaining a loss.

Because profit was not the objective of the Corporation, the lots sold fast - so fast that a lottery system was devised to dispose of the lots fairly among 10 times as many applicants as the number for which land was available.

The Corporation built on its land model communities designed on the neighbourhood pattern - each project complete with a playground, shopping centre and small school. Except for some defects in the treatment of topography and orientation of buildings, the housing schemes possess a number of good points. In one of the schemes, which consists of about 900 units, the house plans were well thought-out and logically designed with an eye to economy and functional use of space. The walls are of hollow concrete blocks and the roofs of corrugated asbestos sheets on timber trusses. The houses are semi-detached, each unit consisting of a living-dining room, a bath-and-toilet, a small kitchen, and one or two bedrooms with built-in closets. The floor area of the units varies between 20 to 50 square metres on lots of 300 to 400 square metres. Because of past experience, these houses were not sold, although there were many prospective buyers. They are now merely being let at "economic" rents. Another project is to be undertaken this year at a cost of approximately 4 1/2 million pesos (approximately $2.25 US millions or £ 803,600) if funds are made available.

The limited funds given the Corporation and the present policy of the Government regarding subsidized housing have not made possible the construction of sufficient houses to meet the demand, nor is it possible to rent the few existing houses at less than the economic rent. In order to lower the cost of the houses, and therefore the rents, the Corporation is utilizing prefabricated building parts and manufactured hollow concrete blocks.

U.S. Advisory Housing Mission. The People's Homesite and Housing Corporation is governed by a Governing Council composed of a Chairman and three members. The actual management of the Corporation is entrusted to a Manager who is not a member of the Council. In 1946, the United States Advisory Housing Mission to the Philippines proposed the centralization of

administration of the Corporation by abolishing the Governing Council, and the substitution of a single administrator instead. It also recommended that all housing activities of the Government be carried on as a part of a completely integrated programme, and further proposed that towns be authorized to proceed with housing programmes for low income classes and that the national housing agency should provide only over-all technical guidance, financial and legal assistance and set-up appropriate standards. It was pointed out that from the standpoint of administration of a national programme and policy in the Philippines, "a separate local entity in the form of a housing authority" would serve the country best in solving her housing problem. It was also explained that "cities in the Philippines are not classified and organised pursuant to a standardised pattern, but each possesses distinct and unique forms of powers, varying with their non-uniform charters. In such a system, the national government would have troublesome legal questions with respect to the necessity of securing separate and distinct amendments which would be appropriate to each of these charters. On the other hand, if the local authority device is utilized, a single act of national application, setting forth the powers granted to each duly authorized authority, would establish a standardised type of entity whose powers would be knowable and certain. Such would not only facilitate and simplify the problem of national and local relationships, but it would also give to the securities and obligations of the local authorities a certain standardized legal character which would tend to be conducive to their long-term marketability. Decentralization in administration of the housing programme is necessary to disperse these operations from the Federal level in Manila and to bring them closer to the locale of all of the other regions which need housing."

This Advisory Mission made other commendable proposals on the streamlining of the present cumbersome procedures of slum clearance, on housing finance, and on land policy; these proposals are still valid at the present time, but they need to be implemented.

Other Housing Agencies

The merging of the National Housing Commission and the People's Homesite Corporation is a direct result of the recommendations of the U.S. Advisory Housing Mission. Unfortunately, however, there are still certain housing agencies that are not yet under the jurisdiction of the new Corporation. For example, the Bureau of Labour still does some scattered work on labourers' housing. One of its bigger schemes is the Punta Housing Project which is a group of row houses located in Tondo, the slum district of Manila. The houses in this project are made of timber and galvanized iron sheets and have proven themselves difficult to maintain.

In addition, there are two major agencies at present responsible for rural housing. One of them is the Rural Progress Administration which was created by the President in 1939 to promote small land ownership and to improve the living conditions and general welfare of the rural population. This agency may negotiate for the acquisition of large estates and subdivide them into homesites for the rural population. Many of the estates acquired by the Administration were not in rural areas, and consequently were of no use for the rural population. About half a dozen of these estates are located in and around Manila and were divided into substandard lots which were sold to the squatters occupying them. The National Planning Commission refused to give approval to the lots, which violated most of the minimum requirements of its Subdivision Regulations, on the strenghth of the argument that the approval of such substandard layouts would mean the creation of future slums. The Rural Progress Administration contended, on the other hand, that it had to accommodate the greatest possible number of the residents on the overcrowded estates, and that compliance with the Sub-Division Regulations would mean the displacement of many families. As a result of this conflict, these lots, which have been bought by the people, could not be given legal title, nor could permanent building permits be issued; meanwhile, new slums were created.

It seems desirable that urban land, such as that acquired in the cities by the Rural Progress Administration, be developed as housing projects and not as real estate subdivisions. With proper design and the necessary

financial backing, sufficient decent residential units may be constructed to serve the greatest number of people. These housing projects will have all the amenities of community life such as open spaces, shopping centres and proper drainage - more than mere land can offer.

The other agency concerned with rural housing is the National Land Settlement Administration which was created by act of Congress in 1939. Among its many functions are the acquisition, settlement and cultivation of large tracts of land with a view to enabling small farmers from congested areas and military trainees to obtain their own farms. It is also charged with the responsibility of encouraging migration to sparsely populated regions of the Philippines and of facilitating the amalgamation of the people in different sections of the Islands. It has developed large rural settlements like the Koronadal Valley Resettlement Project in the southern island of Mindanao. This project is sprawled across a fertile valley and has been planned complete with a large village, granaries for produce, co-operatives, supply roads, electric power, etc. Its people came from various parts of the country - people who were different in many ways but who left their crowded birthplace for a new and untried land in order to live and make a living - their eyes full of eagerness, their hands willing to toil, their bodies and minds aware of the promise of tomorrow. And they did not only live and make a living; they also learned to live with one another. The encouraging results of the project have given significant support to the principles involved in its planning and development.

6. Home Financing Act.

In order to stimulate home building and land ownership and to promote the development of land for that purpose, Congress, on 15 September 1950, passed the "Home Financing Act", creating the Home Financing Commission with an initial capital of 5 million pesos. To accomplish its objectives, the Act provides liberal financing through an insured mortgaged system; and it also stimulates saving through the accumulation of savings in insured institutions. The Commission may insure banks, insurance companies, building loan associations and other qualified lending institutions against losses which they may sustain as a result of eligible property improvement loans.

The activities of the Commission involve both urban and rural developments. For example, it may insure private corporations, associations or co-operative societies which are legal agents of owner-occupants, or trusts formed for the purpose of rehabilitating slum or blighted areas, or providing housing for rent or sale. Furthermore, in order to promote the production of housing at moderate prices or rentals, through the application of modern industrial processes, the Commission may also insure loans to finance the manufacture of materials to be used for the construction of houses.

In order to assist in developing rural areas and to encourage development of agriculture by individuals and associations, the Commission may insure loans for: subdividing and developing tracts into small farms, including housing, for subsequent resale; acquisition or installation of facilities and equipment for increasing the productivity of land and marketing of crops; and for irrigation projects, including hydro-electric power, for agricultural development.

7. Rural Homes and City Homes

The farmers and other country people of the Islands have developed a really functional home - a light-material house on stilts, well ventilated and cool. Its posts are either small logs or heavy bamboo trunks. The walls may be of sawale or woven bamboo mats, and the roof of tall cogon grass or nipa palm. The floor, which is raised above the ground, is usually made of narrow slats of bamboo nailed or tied to wood or bamboo joists, the slats spaced far enough apart to allow the free movement of air. A small hut may have only one room which serves for sleeping, dining, or living during different times of the day. The kitchen, which is at the rear, has an earth stove perched on a window shelf, and nearby is the batalan where the farmer washes his hands and feet when he comes home from the fields.

In the rural areas, the homes are usually grouped together although some are isolated due to the desire of the farmers to be near their farms. The road that leads to the village is often dusty and invariably leads to or passes by the one-room schoolhouse on a plot which is partially cultivated by the children for vegetables, as part of their education.

The towns and cities have been greatly influenced by western concepts, sometimes with favourable, sometimes with unfavourable results. There are permanent mansions of masonry and steel, residences of timber and corrugated galvanized iron sheets, and modest homes of bamboo and nipa palm. Floor plans and façades are adaptations of western practices. Wherever the land values are high, buildings are grouped close together and are constructed almost to the front lot line - with the hope that some day they may also serve as stores. The streets usually follows the gridiron pattern, and during market days are terribly crowded with traffic - a mixture of cars of all descriptions and of horses- or carabao-drawn vehicles

The quality of design and construction of Philippine houses, both rural and urban, has been improved by publications of popular plans in almost all the leading magazines and newspapers in the Islands. Demonstration models of ideal homes have been constructed in various cities and provincial centres. The public enthusiasm for ideal homes made one thing clear: the Filipino likes a good home and will work hard to own one.

8. The Problem of Squatters

In large cities like Manila, squatting on somebody else's land has become almost an art and a profession. It started when refugees from the troubled areas fled to the cities, and was tolerated at first, because of the emergency. The situation was generally thought to be a temporary one and therefore harmless. It has unfortunately proved to be neither.

The process which led to the present situation developed as follows: A refugee spots an open space. Nobody seems to be around, so he sticks bamboo poles into the ground and builds himself a leanto shack - sometimes overnight. Next day, he notices that there are many other shacks like his own which must have sprung up, likewise, during the night. New refugees come in search of a place to sleep and ask him if they may share his shack. He consents and charges them rent, or he sells them the shack and then finds another vacant spot where he starts all over again. It is not surprising, therefore, to find some squatters with two or three shacks for rent.

Near downtown Manila, there is a large colony of squatters on Government land. The conditions in this colony are very unsatisfactory; congestion and lack of sanitation have made a slum of the area. The first occupants were war sufferers; out of the 150 original squatters, however, only about five have remained, most of them having sold their shacks to others. The structures near the main streets are temporary stores renting at exorbitant rates; those inside the compound are residences, most of them receiving boarders. The present owners of the houses have petitioned the Government several times to sell them the land which they occupy. To subdivide the area equally among the squatters would net each lot about 12 square metres of land.

The National Planning Commission objected to the subdivision of the area for residential purposes because it was valuable commercial land. Instead, it proposed a housing development composed of 4-storey structures with stores on the ground floor and residences on the upper floors, and provided with open spaces and utilities. This type of construction would accommodate as many residents as there are squatters now. It was further proposed that the land be sold at auction to one purchaser and the proceeds used to buy elsewhere more appropriate residential land for the squatters. Nevertheless, the squatters have made up their minds to remain where they are.

9. Relation of Housing to Planning

Housing is linked or should be linked with planning. The Presidential Order which created the National Planning Commission* specifically mentioned that residential development should be in accordance with the general plans. This conformity to the general plans is effected in several ways.

The National Planning Commission has drafted Zoning Regulations and Zoning Maps for several cities and towns of the Philippines. Zoning is an instrument of town planning, consisting in dividing the planned areas into zones for specified uses, for the purpose of controlling the development of land and of buildings (nature of buildings, height of buildings, coverage of lots). The residential zones have been classified according to the intensity of the use

* See paragraph 3 of this Chapter

of land so that single-family homes cannot be encroached upon by either row-houses or apartments. The control of the maximum heights of buildings and the coverage of lots is partly aimed at regulating the density, accomplishing thereby a desirable distribution of population throughout the urban areas.

Subdivision regulations, another instrument of planning, have also been adopted to guide the residential development of large estates by specifying the minimum requirements for lot sizes, street frontages, street details, open spaces, etc.; these requirements vary for different parts of the communities. Through these regulations, the National Planning Commission controls also the timing of the actual subdivision of land, for the Commission is empowered to determine whether and when land is ready for subdivision, depending on the availability of services and utilities on or in the immediate vicinity of the sites concerned. Subdividers cannot sell land for residential purposes unless the community facilities have been or are being provided.

By means of these two planning instruments, the location and character of housing developments in the Philippines is being guided. It is gratifying to note that, except in certain cases which were mentioned earlier, the housing agencies in the Islands have been co-operating admirably in the implementation of the general plans. The People's Homesite and Housing Corporation has been referring its plans to the National Planning Commission even in their "sketch" stage. The minimum housing standards* which are being used in the design of housing schemes have been worked out with the co-operation of the staff of both the Corporation and the Commission.

10. Survey and Research

Need for socio-economic survey.

The planning data used by the National Planning Commission in planning Manila and its vicinity were gathered hastily after Liberation when they were urgently needed for the draft of the preliminary plan for the city. Since then, no thorough survey of the social and economic conditions of the city has been

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* See Appendix I.

undertaken, although surveys have been made of the smaller towns which requested to be planned. It is true that several spot surveys and approximate estimates of existing conditions in Manila were made for various special purposes. There is much to gain from a comprehensive factual survey of conditions, if realistic planning is expected to be achieved in the development of urban areas in the Philippines. Diagnostic data should be brought up-to-date and should be made to cover not only the physical but also the economic and social aspects of town planning and housing.

The census of the Philippines has been useful in several ways, but it is felt that in its present form it is not of great use to planning and housing. Its classifications and summaries are not sufficiently illuminating to serve as a guide for the drafting of proposals for urban development. With a certain amount of overhauling of its forms, however, a great deal of useful information may be gathered with only a slight increase in expense.

Research.

The building methods and materials used in the Philippines have been influenced a great deal by the United States, and the country has profited by the facilities for adopting these methods and materials which have been used and tested abroad. But at the same time it should be realized that the use of the country's own practices and products has been neglected and that little or no efforts have been made to improve old methods and to discover new ones by systematic research.

The Republic could make a profitable investment by establishing a central building research station which would undertake and co-ordinate research into all phases of building construction and housing: physical, economic and social.

For example, there is an abundance of timber in the Islands. Philippine hardwoods are well known and are in great demand all over the world for their strength, beauty and durability. But there are great quantities of inferior timber which could be employed more extensively and could be made more attractive, more resistant to pests and weather and rendered more useful through new methods of treatment or processing. Plywood is being manufactured successfully now. Research has yet to be undertaken into the manufacture of fibreboard and other building applications.

A second example is bamboo. Other countries have used it for reinforcement for both concrete and plaster, for roofing, and for household equipment. It is true that several private firms have done research of their own into a variety of materials: grass-asphalt blocks, asbestos-clay tiles, coconut husk products, sugar-cane bagasse boards, saw-dust bricks, etc. But all of this research has been done for profit rather than for service. In addition, there is much duplication of effort and little co-ordination.

Instead of relying on the efforts of private individuals and agencies in doing pioneer building research, the Government could establish a central building research station, first, by pooling the research facilities of the Bureau of Science, the Bureau of Public Works Testing Laboratory, the Bureau of Forestry, the Bureau of Agriculture, the University of the Philippines, etc., and then by expanding into an Institute of Tropical Housing along the same lines of a similar Institute which has been established in Puerto Rico.

Such an Institute could study the uses of building materials, including their preservation and protection from pests and external physical conditions. It could also conduct experiments on practical applications of building materials and details of construction with respect to lighting, thermal control, ventilation, etc.

The Institute of Tropical Housing also could undertake research into the economic and social aspects of housing, such as housing finance, co-operatives, residential land values, aided self-help, community services, social welfare, etc.

11. Training.

The Philippines possesses many colleges and universities. Manila, for instance, has a considerable number of educational institutions, most of them private; more than half a dozen of these give courses in sociology, economics, engineering and architecture. Yearly, 100 or more students are licensed as qualified civil engineers and about 40 as qualified architects. Nevertheless, in spite of these results, there is a shortage of adequately trained professionals to tackle the planning and housing problems of the country.

It was not until lately that engineering and architecture courses included a few short subjects in town planning, housing and urban sociology. Furthermore, even though these subjects are included in the curriculum, they are sometimes not taught because of the shortage of competent instructors. The few who are available (mostly Government employees), sometimes have to teach the same subjects in several schools. This arrangement had to be discontinued, however, when the Government limited its employees to a maximum number of hours for teaching.

Sociology and economics as taught in school do not put enough emphasis on urban sociology or housing economics. Most of the courses in this line are general in character. Once in a while, however, invitation lectures on town planning and housing are given.

There is urgent need for the training of planning and housing technicians. Much of the real training now is confined to practice in planning or housing offices.

The type of training that is needed most now is on the post-graduate level - the further training of engineers, architects, sociologists, economists and administrators in the art and science of planning and housing as it should be practised today. The Philippines is trying to meet this need by granting scholarships yearly to one or two men to go abroad for study in a particular school or on a study tour to gather practical experience. But only a handful of men can receive these scholarships; and upon their return, they do not always have the chance to show what they can do.

It is therefore suggested that the post-graduate training for planning and housing technicians just described be supplemented either by starting an institute connected with an established school in the Philippines or by giving refresher courses of about 3 months' duration for practising professionals. In either case there will be need for a number of competent instructors in the different fields of planning and housing.

12. Need for an Overall Programme of Development

While the Philippines has the machinery and the basic legislation needed for planning and housing as functions of the Government and although the responsibility for planning is realized, further steps appear to be necessary.

The great bulk of the plans approved to date are plans of parts of towns and cities - of details which look as big and as important as the whole because they are so near. While there is a National Planning Commission, a well-defined national planning policy has yet to be formulated. A balance should be established between cities, and between cities and rural areas. There is need for an overall programme of development properly integrating the various needs of the land and the people; and there is need for a logical time-table for such a programme - a time-table which should be geared to the people's capabilities.

The National Planning Commission, if it is to do justice to the huge job which has been assigned to it, needs more qualified men. The enlargement of the planning staff, however, demands careful consideration. In order to make a well-rounded staff, urban sociologists, planning administrators, land and housing economists and analysts are needed, in addition to planners, architects and engineers.

Although centralization in the responsibility for planning and housing is desirable, it does not necessarily follow that centralization of the actual planning is likewise desirable. Centralization of planning is only necessary where there are not enough men available for planning - where it is best to have these few men working together for reasons of efficiency. Too great a centralization of planning may mean the surrender of local initiative, the loss of local interest, which is unfortunate. Planning is best when it is done through local initiative and is merely guided by the central body.

The National Planning Commission has at present a heavier burden than it can or should carry. The preparation of the zoning and subdivision regulations is the legitimate duty of a planning agency, but their administration is, or should be, the function of each municipality. Furthermore, building regulations

as such are more the responsibility of an engineering office than of a planning commission. The planning body's concern with buildings should centre more on the overall community problems such as for example building density and height, than on structural and sanitation aspects.

There is need for a greater concern regarding the housing of people who cannot decently house themselves. Public education or public sanitation are subsidised government activities. Public housing should be considered in the same way, as a sound investment for good citizenship.

In order to meet the great demand for housing in various types, a survey of the actual housing needs is recommended in order to provide the diagnostic data required for realistic planning.

Finally, it is suggested that emphasis in planning be placed more on guidance than on control; that housing be directed more towards giving shelter to the masses and less towards giving them land; and that research and training into house and community building be stimulated and extended.

APPENDIX A

ORGANISATION AND WORK OF THE INDIAN PLANNING COMMISSION.

Quotations from the review for the period ending July 31, 1950.

"The scheme of organization drawn up by the Planning Commission for its office provides for two Secretariat Branches for Administration and Co-ordination, and for six Divisions, namely, Resources and Economic Survey, Finance, Food and Agriculture, Industry, Trade and Communications, Development of Natural Resources, and Employment and Social Services. On the Secretariat side, the Secretary (who is also Secretary to the Cabinet) is assisted by a Deputy Secretary and two Under Secretaries. For each Division, the staff proposed includes a Chief, an Assistant Chief, four Research Officers and four junior Investigators... For the bulk of its recruitment the Commission has drawn upon the Central Government and the States Governments.

"At the suggestion of the Planning Commission all States Governments have created suitable machinery at Secretariat level for planning. As a rule, this consists of an Inter-departmental Committee of Secretaries. One of the Secretaries has been appointed Secretary for Planning and acts as Chairman. In most States the Committee works under the direction of the Chief Minister. In Uttar Pradesh a more elaborate machinery has been set up than elsewhere. At the headquarters of Government, there are two bodies, the 'State Planning Committee', which consists of Secretaries with Chief Secretary as Chairman and the Secretary in charge of Planning as Secretary, and the 'State Planning Board' which is a consultative body and containe non-officials in addition to members of the State Planning Committee, and is presided over by the Chief Minister. At the district level also there are two bodies, the 'District Co-ordination Committee' consisting of officers of different Departments with the District Magistrate as Chairman, and the District Planning Committee, which is a larger body and contains representatives of Gaon Panchayats, Co-operative Societies, and District and Urban Boards....

"The Commission has set itself to the task of drawing up a plan of development for a period of five years in two stages, the first of two years beginning with 1951-52, and the second of three years.

'The Economic Division of the Commission has been engaged in examining the basic economic situation in the country with special reference to the extent of latent inflationary conditions now existing and the price-level. The Division has also been studying the techniques and experience of planning in other countries and problems relating to controls. Other studies which have been in progress include consideration of the objectives of planning, the line of demarcation between the public and the private sectors in a mixed economy, the estimate of financial resources and methods of financing planned development and problems relating to capital formation.

"Detailed information regarding the development schemes of the Central Government and the States Governments, schemes in progress as well as those which have not yet been begun, has been collected and is being analysed. On the basis of the study which is in progress, the Planning Commission will make recommendations to Government regarding priorities in the public sector.

"The Agriculture Division is engaged in making an intensive study of various aspects of the problem of increasing agricultural production and of rural development generally. A joint study group from the Planning Commission and the Ministry of Agriculture under the chairmanship of Secretary, Ministry of Agriculture will shortly begin work on the preparation of a programme of agricultural production to be achieved during the next five years. The Agriculture Division has already done some work on this problem.

'The Natural Resources Development Division deals with power and irrigation projects, coal and minerals, oil, electricity, scientific and technical manpower and scientific research. The Division has made a study of the phasing of different Central multi-purpose projects and the manner in which funds have to be provided for their completion over a period of years. Measures for the utilisation of power resulting from river valley projects are also receiving attention. The Division is engaged in the assessment of the natural resources of the country and studies on coal, mica, etc., have reached an advanced stage.

'The Employment and Social Services Division covers a number of subjects, more especially, Labour, Health, Education, Rehabilitation and Public Co-operation.... Special attention has been given in this Division to problems relating to industrial housing, technical training and means of securing public co-operation and association in the working of planning. The question of public co-operation is of special importance. In setting up the Planning Commission, Government recognised that its work would affect decisively the future welfare of the people in every sphere of national life and its success would depend on the extent to which it enlisted the association and co-operation of the people at all levels. In pursuance of this, the Commission agreed in principle to a proposal of the Deputy Chairman, which is now being worked out in detail, that there was need for a nation-wide organization of a strictly non-political character consisting of persons willing to volunteer their services, on a whole-time or part-time basis, for constructive work in connection with the social and economic development of the country. In India, even more than in many other countries, the resources at the disposal of Government are by no means adequate for all the urgent tasks of national development. There exists a vast amount of untapped knowledge, experience, skill, energy and other resources which can be utilized for promoting nation-building activity. An organization which provides the means to every person to do his share of public service and thereby to contribute to the collective effort of the entire community can, therefore, assist materially in the development of the country's resources and in the solution of pressing problems such as resettlement of displaced persons, unemployment and under-employment and self-sufficiency in food and essential raw materials.

"In reviewing the work and organization of the Planning Commission it is necessary to observe that the function of the Commission is to make recommendations to the Cabinet and the responsibility for taking and implementing decisions rests with the Central and the States Governments. In considering each subject, the Commission acts in the closest consultation with the Ministries of the Central Government. From them, as well as from the States Governments, the Commission is receiving the fullest co-operation."

APPENDIX B

HOUSING POLICY IN INDIA.

Recommendations in the Report of the Environmental Hygiene Committee to the Ministry of Health - October 1949. Published by the Manager of Publications, Delhi.

HOUSING STANDARDS

The minimum standard of housing for industrial workers may be the same as that suggested by us for the general public. We see no reason for treating them on a different footing. There should be cross ventilation in every living room by at least two windows whose aggregate area should be not less than 10 per cent of the floor area. The kitchen should have a minimum floor space of 50 sq. ft., and a window whose area is at least 15 per cent of the floor space. The rooms and the kitchen should be provided with shelves. The water supply to an industrial colony should be provided through taps if possible in each house in the courtyard, and in exceptional circumstances at the rate of at least one common tap for twelve houses. Houses should not be attached on more than two sides.

If single rooms and kitchens are allotted to a family, in exceptional circumstances, the room should be at least 200 sq. ft. in area so that it may be divided into two by a curtain if necessary.

HOUSING SUBSIDIES, PENS AND WAGES.

The Government of India realised the urgency of industrial housing as early as February 1946 and formulated a scheme under which they agreed to allow a subsidy of 12.1/2 per cent up to a maximum of Rs. 200 a house, provided the Provincial Governments also contributed a like amount. The

response to this scheme was negligible.

After this the Industrial Housing Sub-Committee of the Standing Labour Committee (May 1946) recommended the starting of a housing fund to be administered by a National Industrial Housing Board, including representatives of Provinces, the Centre, States, employers, labour and other interested parties, with a whole-time Chairman. They also proposed Regional Industrial Housing Boards. They recommended that the Central Government and Provincial Governments should between them provide long-term interest-free loans and employers should give Rs. 2 per month per house for every house allotted to them. They also recommended that any deficit not covered by the interest-free loan and employers' contribution should be met by a further subsidy raised by some form of general taxation.

The Bombay Government formulated a modification of this scheme whereby each employer admitted to the benefits of the scheme should pay Rs. 2 per head per month and would get a preferential right to the allotment of houses in the scheme. When an employee was allotted a house the industry would pay a further one rupee towards the rental of the employee, who himself would pay 10 per cent of his emoluments. The Millowners' Association did not respond favourably. We understand that they have denied any obligation to subsidize the housing of their employees.

The latest step taken by the Government of India to implement their industrial housing policy is contained in letter No. Fac.32(30, dated the 13th April, 1949, from the Ministry of Labour to all Provincial Governments and Chief Commissioners (Appendix V). They have reiterated their decision, announced in April 1948 as part of their industrial policy, to construct one million houses in 10 years. For financing it, they have now proposed to give

an interest-free loan to the extent of two-thirds of the cost of housing scheme, the remaining one-third being provided either by the Provincial Governments or by employers sponsored by them. The interest-free loan granted by the Central Government should be liquidated by a sinking fund in 25 years. The employers' contribution to the scheme will be in the form of rent for quarters allotted to their workers at 3 per cent per annum of the cost of the house. The employee will pay either 2.1/2 per cent of the total cost of the house, or 10 per cent of the earnings of the wage-earners (at least two) who may be accommodated in a two-roomed house. It is too early to say what the response will be. The loan to be advanced by the Central Government will be substantial if the response is good. We do not know if the Provincial Governments will be able to advance one-third of the cost of the scheme as loan, and if the employers will voluntarily join a scheme in which the will be required to pay, on the basis of a contribution of 3 per cent per annum of the cost of house, Rs. 13-8-0 per house allotted to a worker in places like Ahmedabad and Rs. 18-12-0 in Calcutta or Bombay. The idea of allowing two families in a two-roomed house is a lowering of the minimum standards that Government have accepted and is regrettable.

The whole question hinges on the economic rent and the prevailing wages. If the minimum wage is fixed by law and contains two distinct parts, one to cover the rental of a house and the other to cover food, clothing, health, education, etc., reasonable recurrent charges on a house can be assured to the party who invests. The houses will then be built in large numbers by various agencies. It will be a public utility, subject to control by the State in the matter of profit. We think the ultimate solution lies largely in this approach. If this is accepted, more than 50 per cent of the million houses required for

industry can be built as public utilities by public housing corporations and the speculative appreciation of land values can be eliminated. The State can own the land and lease it to the Corporations to develop, and thereby reduce the cost of housing. There are several social, hygienic and economic advantages in developing a mixed neighbourhood rather than a purely reserved labour colony. The return on investment will also be better. Circumstances may, however, require the development of a purely industrial colony in some places.

Government should adopt a firm attitude with respect to industrial housing and divert the Excess Profit Tax towards solving this problem.

APPENDIX C.

PILOT DEVELOPMENT PROJECT, ETAWAH: Uttar Pradesh, INDIA

An outline programme and general check list

prepared by the Board of Management

I. Agriculture

1. Soil conservation and experimental ravine reclamation in village Dalipnagar and Lknor.

2. Reclamation of waste land and Cooperative Farming at Ashokpuri, Achhalda.

3. Provide irrigation facilities:

   (a) tubewells,
   (b) river pumping,
   (c) canal lifts.

4. Agricultural engineering:

   (a) improved implements and light machines e.g. soil turning, plough, cultivators, threshers, seed-drill, reaper etc.,

   (b) training, repair and maintenance service through the rural workshop.

   (c) local manufacture of light implements.

5. Multiplication and propagation of improved pedigree seeds e.g., wheat, barley, grain, Arhar, Juar, maize, pea and sugarcane.

6. Improved storage facilities.

7. Improved manurial economy;

   (a) Green manuring with Sanai, Dhencha and Moong No. 1,
   (b) Use of commercial manures e.g., Ammonium Sulphate, Superphosphate and castor cake.

8. Berseem cultivation.

9. Improved agricultural practices e.g., line sowing, weeding, earthing, etc.

10. Plant protection against crop pests and diseases.

11. Layout of orchards.

12. Supply of plants and seedlings.

II. Animal Husbandry

1. Prevention of epidemics by saturated prophylactic inoculations e.g., rinderpest, Haemorrhagic Septicaemia.

2. Improved cattle breeding:

   (a) supply of pedigree animals both male and female,
   (b) artificial insemination centre,
   (c) castration.

3. Treatment of cattle.

4. Poultry: Encourage poultry keeping and improve its breed.

5. Pisci culture.

III. Industries

1. Leather working.

2. Oil pressing.

3. Tanning.

IV. PUBLIC HEALTH

1. Control of epidemics.

   (a) Anti-malaria programme in 4 selected villages.
   (b) Vaccination against small-pox.
   (c) Preventive and curative measures against scabies and cholera.

2. Treatment of ordinary ailments by VLW's.

3. Improved water supply.

4. Improvement of environmental santitation.

   (a) Santitary constructions e.g., soakage pits, compost pits, urinals, pavement of lanes etc.
   (b) General clean-up.

5. Improvement of village roads and routes.

6. Replanning of one or two selected villages.

V. EDUCATION

1. Adult social education.
2. Community Centres with libraries and reading rooms - 8.
3. Fortnightly newspaper.
4. Opening new primary schools.
5. Sight-seeing or conducted tours.
6. Films - One talky projector.
7. Information centre with central library and reading room.
8. One-act plays.
9. Organise and energise the community life through:
   (a) Panchayats
   (b) Cooperative societies.
   (c) Cooperative Unions.

VI. WOMEN'S WELFARE WORK.

1. Nursery school.
2. Women's Adult school.
3. Home industry.
4. Child welfare and maternity centre.

APPENDIX "D

TENTATIVE CLASSIFICATION OF RESEARCH PROGRAMME
FOCUSED ON HOUSING AND COMMUNITY PLANNING

(1) Development of materials

e.g., stabilized earth methods; production of foam concrete; use of bamboo for wall-boards etc.; preservation of timbers; use of cane trash, jute or other fibrous materials for improved roofing, matting, reinforcing of concrete, etc.

(2) Construction Systems

e.g., strength testing of materials; study of prestressed concrete beams as substitute for steel and timber; experimental building types.

(3) Design Improvement

e.g., ventilation and sun protection studies; house planning in relation to structural economy; detailed studies such as improved smokeless chulas (cooking stoves).

PHYSICAL

Insulation factors of new and traditional materials; air change in relation to ceiling heights and natural ventilation; weathering properties of paint, aluminium, etc., in typical climatic conditions.

SOCIAL

Study of family habits among different peoples in different communities, urban and rural, to improve house planning, cooking

and washing arrangements, etc.; wage-rent relationships; studies of consequences of aided self-help methods, particularly in pilot schemes organized for systematic social and economic statistics.

ECONOMIC

Study of land values in relation to housing; economics of self-help; maintenance studies of different building types, etc.

TOWN AND COUNTRY PLANNING

Community or neighbourhood planning requirements related to social habits of country or state (size, limits, shopping habits, school distribution etc.); assessment of industrial, agricultural and mineral resources in relation to population on regional basis; requirements of open space in cities; business and service industry requirements, etc.

APPENDIX E

A LIST OF INSTITUTIONS CONNECTED WITH BUILDING RESEARCH OR TESTING OF BUILDING MATERIALS IN INDIA

1. Roorkee Building Research Institute, Roorkee.
2. National Physical Laboratory, New Delhi.
3. Karnal Soil Research Laboratory.
4. Alipore Test House, Calcutta.
5. Forest Research Institute, Dehra Dun.
6. B & R. Laboratory, P.W.D., Lucknow, Uttar Pradesh.
7. Road Research Station, Delhi.
8. Research Station, Krishna Majsagar

Engineering Colleges in India

1. Sibpur Engineering College, Calcutta.
2. Engineering College, Bombay.
3. " " Ahmedabad.
4. " " Vallabh Vidya Nagar (Via Anand)
5. " " Poona
6. " " Sangli
7. Guindi Engineering College, Madras.
8. Annamalai University, Chidambaram.
9. Benares Hindu University, Benares.
10. Bihar Engineering College, Patna.
11. Mysore Engineering College, Bangalore.
12. East-Punjab Engineering College, Roorkee.

13. Thomason College of Civil Engineering, Roorkee.

14. Engineering College, Trivandrum.

15 Osmania University, Hyderabad.

16. Engineering College, Aligarh.

17. " " Coimbatore.

18. " " Anantpur.

19. " " Osmania.

20. " " Pilani (Jaipur).

MINIMUM REQUIREMENTS FOR HOUSING ON ESTATES, KUALA LUMPUR, FEDERATION OF MALAYA

1. Roofs. (a) Roofs of Marseilles tiles or tiles of a similar type do not require ceilings below.

(b) Roofs of other materials normally used require ceilings - in the case of attap because of the dirt, vermin etc., which may fall from them; in the case of other materials because of the heat they radiate. An exception is made in the case of aluminum alloy containing not less than 95% aluminum, where the terms of Circular Instruction No. 29 of 1950 apply. A ceiling of bertam may be found suitable below an attap roof.

(c) An attap roof may be permitted only on the condition that the employer undertakes to renew it, or to replace it with a permanent roof, within 3 years.

(d) Except where the roof is of tiles or attap, roof ventilation should be provided for each room by means of e.g. a jack-roof, cowl or vent, where the number of rooms side by side exceeds two.

2. Dimensions of Rooms. The legal minimum still stands at 12' x 10'. Action is being taken, however, to get this altered to "160 square feet with a minimum dimension of 10 feet for the smaller side". Until the relevant Gazette Notifications are published bringing the new Rule into force we shall have to proceed by way of persuasion and not compulsion as regards dimensions of rooms and verandahs.

A room of this size may be occupied by not more than 4 adults, an adult to be taken as any person above the age of 12 years. Two persons between the ages of 4 and 12 years will be regarded as equivalent to one adult. Children under 4 do not enter the calculation.

Units in a "shop-house" type of line may be occupied by not more than one family in each case. One relative may be allowed to sleep in the downstairs portion in special circumstances but this portion will not normally be regarded a sleeping room.

In "shop-house" lines or raised lines which have internal stairs the surface area of the stair-well may be included in that of the upstairs room.

3. Verandahs. Verandahs shall run along the length and not the width of rooms. Where there is a single verandah it must be not less than 112 square feet in area. Where there are two, back and front, they must cover an area of not less than 160 square feet. The living room may be extended into one verandah so as to cover not more than half of it but the kitchen must in that case, be placed in the other. The total verandah space will be 120 square feet.

The above applies only to ground-floor rooms and lines. Verandahs are not indispensable in the case of "shop-house" lines or raised lines with internal stairways. External stairways for raised lines should be properly roofed.

4. Kitchens. There should be a fireplace and brick chimney or smoke-hood and flue to each room. Each kitchen to cover an area not less than 48 square feet. In all cases the kitchen will be on the ground floor. With raised lines, the kitchen will be under a separate roof and arrangements should be made to ensure that the smoke is carried away from the rooms, Communal kitchens may be allowed only with kongsi houses.

5. Windows. Total area to be at least 10% of the floor area of each room. The upper portion of a stable door opening in two halves top and bottom may be regarded as a window.

6. Ventilation. Cool-air, ground floor ventilation and undereave ventilation must be provided for each room, front and back. The former may be provided in brick by omitting single bricks in the first course, in wood by a 1" or 2" space at the bottom of the wall and in both cases by means of fixed louvres. The latter may be provided by e.g., expanded metal or lattice work.

7. Floors. Concrete floors (and drains) to be at least 3" thick, preferably 4", and finished with 3/4" cement rendering. With concrete floors wooden sleeping-benches should be provided. Otherwise floors may be of wood.

In ground floor lines the sleeping-room floor may be raised not more than 2'6" but in that case arrangements must be made to ensure that the space below is ventilated but not accessible to poultry and live-stock.

Raised lines must be at least 7' off the ground and the space below kept clear and properly cemented.

8. Walls and Posts. To be of brick and cement, concrete or wood. Where it is sought to use any other material prior reference should be made to these Headquarters.

9. Drains and Aprons. To be provided on all four sides of each building. (The outlet will be carried to such place or distance as the Health Officer may direct).

10. Types of Lines. Normally, lines to be of the ground floor single row type but raised lines to be permitted in exceptional cases e.g. danger from wild animals, liability to flooding. In no case will plans of back-to-back lines be passed.

11. Number of Rooms. The ideal is single-room cottages. Next in order of preferability are two-roomed, three-roomed, four-roomed etc., single row lines. Maximum number of rooms in a line to be 10, except where the roof is of attap when the maximum will be 6.

12. Height. The height of the wall-plate shall be 10' from the floor in all ground-floor lines, in the upstairs rooms in raised lines and both upstairs and downstairs in lines of the "shop-house" type. This does not apply to the outer wall-plate where a living-room has been extended into a verandah as permitted under para. 3 above.

13. Bath-Rooms. Managers should be persuaded to incorporate in their plans proper bathing facilities for each room.

MINIMUM REQUIREMENTS FOR "LINES" (BARRACK RANGES) ON SHORT-TERM MINES IN SELANGOR

1. The following minimum requirements, which have been approved by the Health Authorities, for lines on short-term mines in Selangor are forwarded for your information and guidance. Long-term mines are required to erect lines of a higher standard than those set out herein. All mines in Selangor are short-term mines for the purposes of these requirements except those shown in Appendix "A".

2. These minimum requirements are for lines which accommodate single men and women, whether Malay, Indian or Chinese. Mines which house families are expected to erect proper family accommodation. Application can be made to the Labour Department for information on the requirements for family accommodation. It should be pointed out that plans of new lines must be sent to the Labour Department for prior approval, since according to G.N. No. L.N. 37, dated 14-1-50, all mines in Selangor have been gazetted as estates for the purpose of the greater portion of Part IX Labour Code.

3. Mines within Municipal/Town Board limits will have to comply with Municipal/Town Board By-laws.

INTRODUCTION.

(1) There must be the following buildings:

A. -- A kongsi house and if necessary a dormitory house.
B. -- A kitchen
C. -- A latrine.

(2) Those labourers who are to be housed on the mine and for whom there is no accommodation in a kongsi house must be housed in dormitory houses.

(3) Provision must be made for:

A. -- A dining room.
B. -- A bathing place.
C. -- A satisfactory water supply.

KONGSI HOUSES

(4) Each kongsi house and each dormitory must have:

(a) A water-tight roof of approved roofing material (good attap is permitted).
(b) Eaves not less than seven feet from the ground.

(c) Height of building to the wall plate not less than 10 feet.
(d) Walls of plank or other approved material, but not of attap or split bamboo.
(e) An open covered verandah at least five feet wide the length of the front or back. In the case of kongsi houses, the verandah need not extend along the front or back of rooms not used for accommodation for labourers, such as stores and offices.
(f) Eaves on the other sides jutting out at least two feet horizontally from the walls.
(g) Internal partitions, if required, of not more than eight feet in height. Such partitions to be of planks or other approved material, and not of attap or split bamboo.

(5) The kongsi house must also have a porch or enlarged verandah to enable the labourers to sit outside the building under cover.

(6) All kongsi houses and dormitories shall be surrounded by a cement drain with a sufficient outlet.

ROOMS.

(7) Each room in a kongsi house or dormitory used for the accommodation of labourers must have:

(a) A floor area of not less than 12 x 10 feet.
(b) A floor area of not less than 40 sq. feet for each person accommodated in it.
(c) Ventilation to the open air on at least two sides.
(d) "Compulsory Ventilation" to the outside air (e.g., by open wood-work, expanded metal or open space which cannot be blocked up) of not less than 1/10th of the area of the floor space.
(e) A total area of ventilation to the outside air of not less than 1/5th of the area of the floor space, of which not less than an area equal to 1/10th of the floor space shall be below the height of six feet from the ground, and may consist of windows.
(f) "Cool Air" ventilation at floor level to the open air of area not less than 1 per cent. of floor area.
(g) Raised bed-boards or beds.

(8) All rooms used for the accommodation of labourers shall have a floor of cement, concrete slabs, wood or other suitable flooring material but not of earth or clay.

KITCHENS.

(9) All kitchens shall be separated from kongsi houses and dormitories and shall, if necessary, be connected with them by a covered way.

(10) All kitchens shall have:

(a) A fire resistant roof (i.e. aluminium, corrugated iron, etc., but not attap).
(b) A cement floor over the whole area.
(c) A cement drain surrounding it.
(d) The cement floor continued to the drain, so as to leave no space of earth between the floor and the drain
(e) A floor which is so constructed that water flows off it into the drain.
(f) A cemented outlet drain to a tali ayer, mining pool, or suitable slope; in the latter case the outlet drain should be cemented for at least 20 feet.
(g) A built-in cooking place.
(h) A suitable flue over the cooking place.
(i) A water tank.
(j) Walls of planks or approved material and not of attap or bamboo. Height of walls at the discretion of the employer.
(k) Eaves at least seven feet above the ground.

LATRINES.

(11) A latrine must be provided at least 100 feet from the water supply and below the water supply. In the case of pit or borehole latrines, the floor of the latrine must fit over the top of the pit or hole so that no light or flies can enter. Thus the floor of the latrine must be larger than the top of the pit or hole and must fit on to the surface of the ground all round the pit or hole. If flies can get into the pit by any entrance other than the aperture used for defecation the latrine is not in accordance with these minimum requirements.

(12) A pit latrine must have:

(a) A depth of 10 feet if possible.
(b) One place for every 10 persons.
(c) Separate divisions for men and women.

(13) A latrine built over a deep mining hole, e.g., one with at least five feet of water under the latrine, is permitted in place of the above, but a latrine over a stream is not permitted.

DINING ROOM.

(14) A space of sufficient size must be set aside for a dining room and shall not be used for sleeping cooking or bathing.

(15) The dining room may be under the same roof as the kitchen, or the kongsi or the dormitory; provided that a dining room shall not be deemed to be "the open air" for the purpose of sections 7 (c), 7 (d), 7 ((e) and 7 (f). Alternatively the dining room can be a separate building.

(16) The requirements for the dining room shall be the same as those for the kitchen, except that sections 10 (g), 10 (h) and 10 (i) shall naturally not apply, and the roof requirements shall be in accordance with the provisions of 4 (a) and 4 (b).

(17) The dining room shall be provided with sufficient tables and benches.

BATHING.

(18) Satisfactory accommodation for bathing must be provided.

(19) Such accommodation shall not be:

(a) Close to the well.
(b) Inside the kitchen, sleeping room or dining room.

(20) Satisfactory arrangements must be made to drain the water away from the bathing place.

WELL.

(21) A well or other satisfactory water supply should be provided.

(22) Where a well is provided, it should have:

(a) Cement lining sufficiently deep to prevent contamination.
(b) A cement wall at least two feet high round the top.
(c) A cement apron at least six feet wide round the well. This apron should slope outwards.
(d) A drain to allow water from the apron to flow into a tali ayer or other place some distance from the well.
(e) Where possible, a pump and a cover.

(23) It is recommended that water from the well be pumped to the kitchen tank.

CLEANLINESS.

(24) All lines shall be erected as far as possible, having regard to all circumstances, from any jungle. A space of approximately 200 feet all round such lines shall wherever possible be kept clear of jungle, and it shall be the duty of the resident manager to see that such space is kept clear of refuse and excreta and that the lines are cleaned out daily and all refuse in or near the lines collected and buried or burned, and to detail a sufficient number of labourers daily to carry out these duties.

TYPICAL BATH-LATRINE UNIT, BANDUNG, INDONESIA

A tap is provided, fixed to a concrete post standing in one corner of a concrete slab (4' x 2'8"). In this slab an oval hole gives access to a vitrified syphon-funnel which by subterranean vitrified pipes leads to the main sewer.

For the construction of these parts the municipality charges a fixed price for anyone who is able to pay. Everybody has to pay for the water (metred) at a tariff far lower than cost price.

The residents are allowed to set up walls in bamboo matting or bricks at the edges of the concrete slab, with a door at one of the short sides.

This little room (which can be expanded beyond the concrete slab and roofed over if the permitted built-on area of the plot is not exceeded) is used for bathing, laundering, washing, tapping of drinking water, as well as for defecation. The Sundanese (West-Djawa), being a very clean people, keep this place pure and after defecating flush the syphon with a bucketful of water so that the nightsoil and urine are flushed through the syphon. Most of the residents cover the hole with a piece of timber.

ST/SOA/3
APPENDIX I

MINIMUM PHYSICAL STANDARDS AND CRITERIA FOR THE PEOPLE'S HOMESITE AND HOUSING CORPORATION, PHILIPPINES

For the Planning and Design of Urban Low-Rent Housing Under the NHC

I. CODES AND REGULATIONS:

1. Wherever reference is made to "Codes", building ordinances, rules and rules and regulations, such reference shall be construed to mean the legal and governing laws, regulations, codes and other requirements now in force.

2. Where the codes, building ordinances, rules and regulations are less restrictive than the requirements of these Minimum Physical Standards, the latter shall govern.

3. Where the codes, building ordinances, rules and regulations are more restrictive than the requirements of these Minimum Physical Standards, then such codes, building ordinances, rules and regulations must either be followed, or waivers secured.

4. Where any person wishes to propose the use of building materials and construction methods not covered by any local or national codes, such materials and methods shall be submitted, with all available supporging data, to the authority or agency having jurisdiction thereof, or in the absence of any duly recognized agency, to the National Housing Commission for study and approval of such materials and methods. It is the policy of this Commission to encourage the use of modern materials and construction methods as far as consistent and practicable.

II. THE SITE

1. The selection of the site or sites for a new development should be made with a view to meeting the needs of the various elements to be housed therein and with due regard to plans for immediate or contemplated program of long-range development which would control or influence such selections.

2. The site must be located in a zone which is legally or physically protected for residential developments and duly approved by the National Urban Planning Commission.

3. Underground and overhead utilities, such as water and sewerage systems and electricity must be available or potentially available to the site. In the absence of sewerage system, septic tank shall be provided.

4. The development must be well related to transportation lines, public schools, markets, recreation areas and other amenities to promote health and wholesome living, and all other facilities necessary to the safety and general welfare of the tenants.

5. A development shall be located where it shall be free from periodic flooding, swamps or stagnant water, erosion or other physical hazards which may reasonably be foreseen, or where it will be subjected to smoke, noise, fumes, odors and other nuisances.

6. The topography and sub-surface condition of the site should not be of a nature as to adversely affect economical development and management.

III. DWELLING TYPES:

1. Dwelling types differ in their effect upon site density and therefore must be selected with due regard to land cost. Contemplated types and land cost must be weighed jointly so that (a) excessive land cost per unit does not result from arbitrary selection of low density to justify types, and, conversely (b) sites do not become over-crowded in order to justify high costs. The objectives shall be to secure the lowest density and coverage consistent with all related factors.

2. The types shall be consistent with the anticipated character of the neighborhood development or rehabilitation, and well suited to the general economic level, customs and needs of the prospective tenants.

3. The types shall lend themselves naturally and economically to the form, topography, and surface and sub-surface features of the site.

IV. THE SITE PLAN:

Spacing of Buildings and Coverage -

Buildings shall be spaced not less than 15 meters front to front, rear to rear, or front to rear as the case may be for one story building; and an increase of one and one-half meters for every story added.

The minimum distance between buildings may be decreased by as much as 3 meters toward one end if it is increased by a similar distance at the other; and consistent modifications are permitted to accomodate plans which are not conventional in their outline or in their relation to other buildings.

The ends of buildings one or two stories high shall not be less than six meters at any point and this shall be increased by not less than one and one-half meters for every story added above two stories. The space between wings of any building shall not be less than the projection of the shorter or shortest wing as the case may be. No closed court, regardless of distance between walls, shall be permitted. However, open arcades, garden walls not over two meters high shall not be deemed enclosing features.

The area covered (coverage) by the building within property lines shall not be more than 40% for 2-story dwellings and 50% for 1-story dwellings and in no case shall the gross coverage for the development exceed 35%.

Play and Recreation Areas -

A play area especially planned for children under six years of age shall be provided and computed on the basis of 4 square meters per dwelling. Such play area shall be located at the community building or where no community building exists in the development, it shall be so located that it is easily accessible from all parts of the development. Such play areas shall not be less than 160 sq. m. for each group or not more than 40 dwellings. If the group is more than 40 dwellings, add 4 sq. m. per dwelling.

For school age children and adults recreation areas must be provided near the development or within the development where the following conditions exist:

1. Where no nearby recreation area is available or potentially available in the immediate future.

2. Where existing recreation areas in nearby developments are inadequate or separated by a railroad at grade or other recognized hazard.

Where recreation areas are provided within the development the following requirements for principal recreation areas must be allocated:

a. For development of less than 100 dwellings - 25 sq. m. per dwelling.(This area includes the 4 sq.m. play area per dwelling especially planned for the use of children under six years of age located at the community building.)

b. For developments consisting of 100 dwellings - 4,000 sq.m.

c. For larger developments increase this 4,000 sq.m. (minimum area) by 8 sq. m. per additional dwelling.

General Details of the Site Plan -

The site plan must assure safety, economical maintenance and livability. It must be so designed that it will create an atmosphere of healthful home environment, culture and happiness.

1. Paved sitting-areas, outdoor spaces and small parks, lawns and gardens and other amenities must be given preferential treatments in the site plan.

2. Buildings must be grouped to give a sense of spacious openness and well oriented on the site to give the maximum indirect sunlight, shelter, fresh air and outlook. Exposure to prevailing summer winds is essential.

3. Layout of streets and driveways, sidewalks and paths must be made to insure maximum safety and convenience. The entrance door to each dwelling unit must be reached by a hard surfaced walk. Hard surfaced driveways or walks must be also provided for access by fire-fighting equipment and for the collection of refuse.

4. Streets and other outside lighting consistent with local regulations and practices shall be provided.

5. Street signs shall be provided in accordance with local regulations.

The following minimum widths of streets shall govern:

For all thru streets (curb to curb)	8.50 m.*/
Minor streets (curb to curb)	6.00 m.
Sidewalks along thru streets	1.20 m.
Sidewalks along minor streets	1.00 m.

6. To avoid the dangers of vehicular traffic no through traffic should be permitted within the development.

7. Hydrants of approved design and acceptable to the authorities having jurisdiction thereof must be provided.

V. DWELLING UNITS:

A dwelling unit must contain the following:

1. Living Room)
2. Kitchen) with dining space in either.
2. Separate bedroom or bedrooms.
4. Bath
5. One general storage space (dispensa)

Each dwelling unit shall be provided with the following minimum separate facilities:

1. Toilet and bath (within or without the unit)
2. Cooking (within or without the unit)
3. Running water in the kitchen
4. Electric lighting

Room and other sizes -

*/ Two moving lanes of 3 meters each and one side parking of 2.5 m.

SCHEDULE OF MINIMUM ROOM SIZES 1/
(In Square Meter)

Bedrooms	Occupancy 2/	Living-Sleeping Room 3/	Kitchen	1st Bedroom 4/	2nd Bedroom	3rd Bedroom	4th Bedroom	5th Bedroom	Storage Space 5/
1	2	10	4	10					
2	3	10	4	10	7				
2	4	12	5	10	8				
3	4	12	5	10	7	7			
3	5	13	6	10	8	7			
3	6	14	6	10	8	8			
4	7	16	7	10	8	8	7		
4	8	16	7	10	8	8	8		
5	9	18	8	10	8	9	8	7	

1/ Net areas exclusive of closets or offset entrances.
2/ Infants 2 years of age or under, not included.
3/ Minimum width of Living Room - 3.00 m.
4/ Minimum width of all bedrooms - 2.50 m.
5/ Not less than one sq. m.

Note: Where local building codes govern these minimum sizes must be changed accordingly. In case of flexible design the total floor area for each purpose should not be less than the required area called for in the above.

VI. GENERAL REQUIREMENTS:

1. Where the ground floor slab rests directly on the ground the floor level shall not be less than fifteen centimeters above the highest approved sidewalk grade.

2. Where the floor is of ordinary wooden construction, the underside of the floor joists must not be less than seventy-five centimeters from the ground level. In no case shall the distance from the underside of the floor joists to the ground level be more than 1.5 m. nor less than 2.5 m. If the under floor area is so enclosed as not to admit any ventilation, provide an access door from the outside; if the building is more than 30 meters long, provide access at each end. Net ventilating opening for each under floor area up to 40 sq. m. shall not be less than 1/4 sq. m.; add 36 sq. cm. for each additional sq. m.

3. All dwelling units must have at least two exposures. All rooms shall have at least one window opening directly to the outer air. All spaces or rooms intended for public assembly, offices, clinics, nurseries, or similar functions shall likewise have at least one window opening directly to the outer air. The windows must be so located as to give maximum light, outlook and privacy. The location of windows should be controlled by proper relation to furniture and fixtures and not merely by external symmetry.

4. All stair halls must have natural light.

5. The total free area of windows shall not be less than 10 per cent of the area of the room.

6. No parapets shall be used except in connection with flat roofs.

7. The bathroom shall be accessible from the living room and from each bedroom without passing through another room.

8. The ceiling height of any room shall be in accordance with local building ordinance requirements. Minimum headroom at walls shall not be less than 1.98 meters. Space between ceiling and roof must be ventilated by means of at least two screened or louvered vents.

9. The cubic space per occupant in any occupied room shall not be less than 11.5 cu. m.

10. The bathroom facilities shall include water closet, faucet and shower.

11. Kitchen equipment shall include a sink.

12. The electric layout shall be governed by the local electric code. There shall be at least one ceiling outlet in each room.

13. The construction methods and materials selected must be of such a nature as to insure minimum costs of maintenance and repair. Materials used and details employed shall be such as to facilitate cleanliness and discourage termites, insect pests, rodents, bats, etc.

VII NON-DWELLING FACILITIES:

General Welfare and Recreation

The following facilities in whole or in part shall be included in the development plan provided such facilities do not duplicate existing facilities already available.

1. Community hall for flexible use, including assembly, gymnasium, etc., together with smaller rooms for special uses, kitchen, toilets and storage.

The space for all such facilities (not usable floor area) listed in the following table is given as general guide only:

Number of Dwelling Units	Up to 100	200	300	500	750	1000
All facilities (in sq.m.)	93	186	279	465	697	930

The recreation areas and other special play space required in Section IV - The Site Plan, shall be located bordering the community building.

Space for Community Building and Possible Future Expansion -

Space for the community building, service courts, lawns and paved areas shall be well correlated with the rest of the site arrangement.

Additional space reserved for future expansion of the community building shall be provided and located at least 12.00 m. away from any other building site. This reserved space shall be free of streets, walks, underground utilities or other obstructions which might interfere with future construction.

None of the above spaces shall be included in the calculation of outdoor areas required for recreational use.

Community Building -

The School -

If a school is to be included in the development adequate play area must be provided. It is obvious that a school with one hundred boys would need just as large a baseball field, just as large a basketball court and just as large a volley-ball court as does a school of 500 boys. Therefore, it is necessary to set down a minimum sized yard for any school regardless of attendance, then to increase this at the rate of 18 sq. m. per child when the attendance goes beyond 600.

The minimum size of play area for any school having an attendance up to 600 shall be 16,000 sq. m. (1.6 hectares) or a play area approximately 123 m x 130 m.

The Church

If there is need for a church in the development the area to be used for buildings and grounds should not be less than 600 sq. m.

MANAGEMENT AND MAINTENANCE

Unless otherwise provided for reasons of greater economy and efficiency in the management, maintenance and repair of the development, the facilities noted below shall be provided on the site as part of each development.

a. Management and rental offices.
b. Maintenance and repair shops with a stock and equipment storage spaces.

The sizes of management and maintenance spaces (not usable floor area) listed in the following table are given as a general guide only:

Number of Dwelling Units	50	100	200	300	500	750	1000
Management in sq.m.	30	46	71	92	128	160	174
Maintenance in sq.m.	37	74	130	180	246	300	340

November 27, 1946

RELEVANT EXTRACTS FROM THE REPORT OF THE FAR EASTERN REGIONAL REPRESENTATIVE OF THE DIVISION OF SOCIAL WELFARE

The refugee problem.

"....Thousands of people, used to the uncoordinated existence and unrestricted space of villages are thrown together in a circumscribed area and have to learn to live and let live. The problems involved in rapid urbanization are highly complex and there is a definite art of city planning which oriental countries have to understand to save themselves from the evil consequence of unplanned and uncontrolled city building."

"Shortage of housing and measures to meet it.

"A further result of rapid postwar urbanization has geen the overcrowding of certain cities in the region. To illustrate by a few examples, Bombay, Calcutta and Delhi had prewar populations of approximately 1,5, 1.8 and 0.5 millions which grew to 2.7, 4.5 and over 1,2 millions respectively during and after the war. The population of Karachi increased from 0.4 to 1.2 millions, of Djakarta (Batavia) in Indonesia from 0.5 to nearly 1.5 millions, and of Kuala Lumpur in Malaya from 40,000 to 170,000. Hong Kong, with a large influx of Chinese civil war refugees, had its population increased from 0.9 to 2 millions, and the population of Seoul in Korea expanded from a prewar total of about three-quarters of a million to more than one and a half millions.*

"The increase in the number of large towns during last two decades is also very substantial in several countries of the region. For example in post-partition India, towns of over 20,000 population increased from 313 in 1931 to 415 in 1941 and cities of 100,000 and above from 33 to 50. In Japan the increase has been phenomenal in a much shorter period due to the return of the soldiers and repatriates. Thus in 1945 towns of 20,000 and over were 560 and in 1947, 615, whereas in the same period cities of 100,000 and over increased from 36 to 52. This is not necessarily a phenomenon of actual postwar urbanization, for, it seems that people who had removed during war-time to smaller towns or villages or had left the country may have returned to the towns and cities of their previous residence. In the Philippines, towns of 25,000 and o over increased from 4 in 1939 to 11 in 1948 and cities of 100,000 and over from 3 to 8 in the same period. The urban population in Ceylon increased from 736,000 in 1931 to 1,020,000 in 1946. In Korea, towns of 25,000 and over increased from 26 in 1943 to 32 in 1949 and cities of 100,000 and over from 4 to 8 in the same period. There has been a very large corresponding increase in towns or villages of 5,000 and over up to 20,000 in all countries of the region. In most cities there is normally an annual addition of population by natural increase and immigration. A certain amount of dilapidated housing has to be demolished, and to replace the demolitions and meet the demand for

* These are approximate estimates. Exact figures will be available after the forthcoming Census of 1951.

housing of the augmented population, a certain number of dwelling units have to be constructed annually. If the supply is not adequate, there is overcrowding and insanitary living which have their adverse effects on the physical growth, health, morals and general contentment of the people. With rare exceptions, however, no statistics were kept or collected to determine the number of housing units required from year to year in countries of the region. There were consequently no housing programmes such as were prepared for European cities, particularly after the first world war. Housing has been in universal shortage, and the second world war has aggravated the situation out of all proportion.

"Stoppage of normal annual construction during war years.

"In spite of the sudden increase of population of most cities in the Far East during and after the war, not only was there no conscious effort to build for this great influx of people, but during the war the normal construction of housing units stopped. The result was unprecedented congestion in cities and unhealthy over-crowding of tenements.

"To give an illustration, in a city like Bombay, the pre-war average annual increase of population was normally 40,000 and the number of housing units built was about 10,000. During the five and a half years of war the population increased by over a million, whereas the average number of dwelling units constructed annually during these years was estimated to be only 300. One can imagine the overcrowding in the single-room tenements that constitute 74 per cent of the accommodation in the city. In these single rooms people make their bedroom, sitting room kitchen, bath and sick room. The average tenant population per room was computed to be four by a Housing Inquiry Committee in 1931. With the wartime increase of population, the Housing Panel, one of the three panels appointed by the Government of Bombay in 1945 to prepare the Greater Bombay Scheme, computed it at about seven per room.*

"The position in Japan was slightly different in so far as even during the war a certain amount of civilian housing was being built. During the decade 1930-1940, an average of 132,000 dwelling units was constructed annually, whereas during the war years 1941 to 1945 there was an average annual construction of 149,000 units inclusive of non-residential buildings. From 16 August 1945 to 31 October 1949, 1,543,000 dwelling units and 472,000 other units were constructed. The statistics available at the end of the war showed that the total loss of housing from bombing, fire, demolition, flood and earthquake approximated to 2,427,000 units. The American and Japonese authorities estimated that in the five-year period from 1948-52 inclusive, Japan would need about 4 million additional dwelling units, whereas its capacity to build is 550,000 per annum in the first three years and 600,000 in the next two.

"Subsidized housing for low-income groups

"The shortage of housing for the lower income groups is universal in all the cities of the region. Private investment in housing is mainly dependent

*The Greater Bombay Scheme: Report of the Housing Panel, Bombay 1946.

on profitable returns and, particularly during and after the war, private capital has not come forward to build for the low-income groups. This is because the cost of building materials and labour has risen so steeply that profitable rents cannot be obtained from houses for the low-income groups; further, slum housing would not be permitted under stricter municipal building regulation. Governments have therefore been obliged to subsidize housing for the low-income groups. There has been some progress in making good the war-time destruction of housing in Japan, the Philippines, Malaya, Singapore and North Borneo. Legislation has been enacted in other countries for helping cooperative housing by providing loans for land and housing, the purpose being to encourage middle class housing by offering loans from government on easy terms on the security of the houses. The Government of India announced a decision in April 1948 to construct 100,000 workers' houses in 10 years, and to constitute a Housing Board for the purpose. It is not known how far this has been implemented in the light of the present financial stringency. The Government is also setting up a factory near Delhi for manufacturing prefabricated housing, with more to follow in other parts of the country.

"The Government of Bombay has established the Bombay Housing Board and constructed or repaired a total of 10,000 dwellings with varying accommodation for the working and middle classes. It has been commissioned by the Government of India to erect a township for 50,000 displaced persons at Kalyan, a town 32 miles from Bombay. Concessional rents are charged in most of these subsidized housing schemes. Proposals are being considered to make industrial concerns contribute towards housing their workers.

"Ceylon enacted legislation in June 1949 establishing a Housing Loans Board and a Housing Loans Fund. The problem of housing is acute in the federal and provincial capitals of Pakistan, especially Karachi and Lahore, where there are large refugee camps sheltering thousands of refugees in tents, barracks, buildings and improvised sheds of hessian. The Federal Government has allotted about 4,000 acres of land to various Housing Sections in the city for building purposes."

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